Q. I show you an exhibit which I have had marked "Complainants' Exhibit 21 (Hogeland)" entitled "Lines in Minnesota—Statement showing quantities moved by, and prices paid to, contractors, for grading of which vouchers are on file." Will you explain just what that exhibit purports to show?

A. Well, the heading which you have read explains pretty fully what it is. Do you desire me to take each column?

Q. No, it is not necessary to take each column. Just state what has been done in preparing this exhibit?

A. We have gone through our records as far back as we could, as far back as we had records of the various lines in Minnesota, and taken out from the vouchers paid contractors the cubic yards of the various classes of material and the amounts paid, and worked out average prices per yard from such as shown on the statement. The whole covers 26,043,930 cubic yards of earth, at an average price of 21 cents per cubic yard; 552,611 cubic yards of hard pan, at an average price of 40 cents per cubic yard; 156,310 cubic yards of loose rock, at an average price paid contractors of 45.6 cents; 189,625 cubic yards of solid rock, at an average price paid contractors of $1.17. This shows the amounts paid contractors. It does not include overhaul, transportation charges, or extra bills such as we mentioned yesterday.

Q. It appears that ranging over a period from 1885 to 1907, there has been paid to contractors, for moving earth, in the State of Minnesota, an average price of 21 cents.

A. Yes, sir.

Q. Now, turning to your exhibit No. 16, where the average price, including all charges, of 44.8 is shown, and the average contract price of 33.4, leaving 11.4 cents as the addition you referred to in your testimony, if that were added to the 21 cent price, shown on exhibit 21, it would make 32.4 cents, would it not?

A. Yes, sir.

Q. As the total price, including all charges?

A. Yes, sir.

Q. And similarly, the same showing would be made for other classes of work?

A. Yes, sir.

Mr. Holden: We offer this Exhibit 21 in evidence.

By Mr. Teal:

Q. You prepared an estimate in the Spokane case, did you not, Mr. Hogeland?

A. Yes, sir.

Mr. Teal: Now, I would like to, as a part of the cross examination of this witness, have Mr. Hogeland introduce, or have him present a copy of the estimate prepared in the Spokane case and of the tabulations accompanying it. You understand what I mean, don't you?

The Witness: Yes, I understand what you mean—presented just the same as presented in the Spokane case.

Q. Yes.

A. Yes.

Q. You stated that in this exhibit 15 of yours, that about $61,000,000 of that represents new work?

A. New work, improvements or additions to the property, investment in other properties, like the Spokane, Portland & Seattle.

Q. Now, I want to go through this just as fast as I can. Under items 36 to 39, which included "Stores and supplies on hand" etc. that amounts to $39,258,020. Is that part of the $61,000,000?

A. Which is that?

Q. The last four items.

A. How much do you say it amounted to?

Q. Well, the four of them, added up, according to my figures, in round numbers, $40,000,000?

A. I did not include all of the stores, because in the Spokane statement we had an item for stores, so that it is not right to consider the entire amount of stores shown in Exhibit 15 as an addition. About $1,800,000 would be the increase in the stores.

Q. About $37,000,000 of that amount would fairly represent it?

A. I have got it tabulated here, what I have for each item, if that will help you.

Q. All right. Read it into the record.

A. I will refer to Exhibit 15, and give the items as they appear there:

Item 2, Right of way	$ 800,000
Item 4, Grading,	2,800,000
Item 5, Tunnels,	500,000
Item 6, Bridges,	1,400,000
Item 7, Ties,	1,500,000
Item 8, Rails,	2,215,000
Item 9, Frogs and switches,	64,000
Item 10, Track fastenings	500,000
Item 11, Ballast,	200,000

Item 12, Track laying and surfacing	372,000
Item 14, Fencing	200,000
Item 16, Interlocking,	200,000
Item 18, Station building,	700,000
Item 20, Shops,	350,000
Item 21, Shop machinery,	200,000
Item 22, Water stations,	500,000
Item 23, Fuel stations,	20,000
Item 26, Docks and wharves	300,000
Item 28, Miscellaneous structures	520,000
Item 36, Stores and supplies,	1,800,000
Item 30 to 33, inclusive, Equipment,	15,000,000
Item 37, Lines under construction,	7,908,000
Item 38, Interest in terminal railways,	1,303,000
Item 39, Interest in Spokane, Portland & Seattle,	21,827,000

The whole, totaling $61,209,000.

Mr. Holden: You have simply given the round figures?

The Witness: I have given round figures; yes, sir.

Q. These items which you have now given represent, not the difference between the Spokane exhibit and this one, but the actual money that has been expended for the items which you have mentioned, is that correct?

A. No; I don't think you state it quite correct. It represents the increases that have been made in those items since that time.

Q. Does that represent actually new material or new building?

A. Yes, sir; or improvements.

Q. Or improvements?

A. Yes, sir.

Q. In other words, it does not represent at all, for instance, the difference between your estimate on the cost of the building at that time, and your estimate on the cost of the same building now?

A. No, sir.

Q. Now, that accounts for $61,000,000. As I understand, the difference between your Spokane estimate and this estimate is, in round numbers, $134,000,000, isn't it?

A. Yes, sir.

Q. That, then, leaves $73,000,000 to be accounted for?

A. About $73,000,000; yes, sir.

Q. If I understand it correctly, the interest charge is increased, in round numbers, about $55,000,000?

A. Yes, sir.

Q. The administration expense are increased, in round numbers, $6,970,000?

A. Something like that.

Q. And the additional cost on the rails, by reason of using a different basis this time, amounts, in round numbers, to about $3,450,000?

A. No; I think that amounts to about $2,235,000.

Q. That accounts for, in round numbers, about $65,000,000. That leaves about $8,000,000. Now, that $8,000,000—a very large part of that, would be represented by the difference in your system of figuring freight at this time, than formerly, wouldn't it?

A. No, I think not, Mr. Teal. You must recollect that the percentages are added to the whole thing—interest and organization expenses, and a part of it comes in in that, and my contingency being figured, now, on a larger sum, there would be some addition in that. By the time you analyze it, you account for a good deal more of it in that way.

Q. But those are the three big items?

A. Those are the three big items, yes, sir, you are right.

Q. Where one line, owned entirely by another line—simply a subsidiary corporation, paying to itself charges back and forth, is simply going from one pocket to another, isn't it?

Mr. Holden: I think that is a matter of argument. The Interstate Commerce Commission says it is not, because you have got to pay tariff rates, and I think that is the best answer to that.

Q. What do you think about it, where you form a subsidiary company in Montana, to build a road and operate it, and the parent road owns all the stock—to whom do the returns go, if there are any returns?

A. I suppose the returns go to the parent company in that case.

Q. On this Burlington road, which you took your people out on from St. Louis,—one-half of that stock is owned by the Northern Pacific, and one-half by the Great Northern, isn't it?

A. I can't tell you about that.

Q. You figured the advance on ties owing to the possible diminution of the supply in the future? That is the way you figured your—

A. I considered that it was fair to consider the price was likely to increase. But you will notice that I have used the same price that we did pay in 1907.

Q. Now, there is an enormous amount of steel of all kinds

used in the construction of this railway, as reproduced, is there not?

A. Yes, sir.

Q. Now, in arriving at the price of steel you have taken the prices that you have paid for the last two or three years, have you not?

A. Yes, sir.

Q. You have made no allowance for the fact that duty might or might not be taken off?

A. No.

Q. And therefore a reduction follow in the price of steel?

A. No allowance made for that.

Q. Well, you made no allowance for anything in connection with the steel?

A. No, sir.

Q. Excepting the assumption that the price for the last two or three years will prevail for the future?

A. Yes, sir.

By Mr. Walter:

Q. What is the average width of a single track, of the dirt that is moved or goes into the roadbed?

A. Well, are you speaking about the roadbed itself, or the tops of the cuts, or the bottoms of the fills?

Q. Yes.

A. Which?

Q. The average width throughout your 8,500 miles of track?

A. At the top of the roadbed?

Q. All over your system—the dirt that would have to be removed?

A. That is a pretty broad question. If you mean just the width of the roadbed where the ties are laid, I can give you that.

Q. How much is that?

A. That would probably average about 18 feet.

Q. Throughout your system?

A. Yes, sir.

Q. Now, you have given, in round numbers, 217,000,000 feet of excavation of all kinds?

A. No; cubic yards.

Q. Cubic yards, I mean?

A. Yes.

Q. That is an average of about 24,000 to the mile?

A. I think it comes something like that.

Q. And for each lineal foot of single track road, it would be something like five cubic yards?

A. Yes, I think it would be a little more than that.
Q. And a cubic yard would be 27 cubic feet?
A. Are you asking me that question?
Q. Yes.
A. We had that a good long time ago.
Q. No difficulty about getting at it?
A. No.

Mr. Holden: I don't think at this time I want to offer this in evidence (exhibiting paper to Mr. Teal), because it encumbers the record, and it is not necessary.

Mr. Teal: You have a right to refer to any of these things.

Mr. Holden: But I simply say now that in the argument of the case I shall refer to classification of expenditures for road and equipment, as described by the Interstate Commerce Commission, in accordance with Section 20 of the act to regulate commerce—the first revised issue—issued over the signature of Secretary Mosely from the government printing office in 1907.

Mr. Teal: Well, haven't we a right to refer to any official documents of the government in this case.

Mr. Holden: I think so.

Mr. Teal: There would be no objections on our part.

By Mr. Teal:

Q. Can you state, in your judgment, whether or not this cost of reproduction is greater or less than the original cost of the Great Northern Railway?

A. I can't state.

Mr. Walter: Is it greater or less than the value of the property?

Mr. Holden: Well, Mr. Hogeland is not called as a witness on that subject.

The Witness: If you would let me answer the question, I would say that the value of the property is greater than that.

Mr. Walter: How much greater?

The Witness: I am not prepared to say how much greater.

Mr. Walter: Do you know what the value of the property is?

The Witness; No; and I don't think anybody else does. I think that is what we are trying to arrive at.

Mr. Walter: What light does this reproduction throw on it?

The Witness: I think that it throws a great deal of light on it. That is just my judgment.

Mr. Walter: Just merely one element, isn't it?

The Witness: Yes, sir; I think it is one element.

(A recess was here taken until 2.00 o'clock p. m.)

WILLIAM G. JOHNSON, being duly sworn as a witness on behalf of the complainants, testified as follows:

Direct Examination.

By Mr. Donnelly:

Q. Mr. Johnson, what position do you hold with the Northern Pacific Railway Company?

A. I am assistant comptroller of that company.

Q. How long have you had that position?

A. About four or five years.

Q. You testified before the Interstate Commerce Commission, in December, 1907, in the hearing of the matter of this advance in lumber rates, did you?

A. Yes, sir.

Q. Have you prepared a statement, Mr. Johnson, showing the gross and net revenue of the Northern Pacific Railway Company since that Company has had possession and ownership of the Northern Pacific properties?

A. Yes, sir; down to June 30, 1908.

Q. Beginning at what time?

A. September 1, 1896.

Q. It was at that time that the Northern Pacific Railway Company came into possession of the Northern Pacific properties, was it?

A. Yes, sir.

Q. Will you produce that statement?

(Witness produces paper which was marked "Complainants' Exhibit 22 (Johnson).)"

COMPLAINANT'S EXHIBIT 22 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

STATEMENT SHOWING INCOME AND ITS DISPOSITION FOR THE PERIOD OF 12 YEARS AND 10 MONTHS BETWEEN SEPTEMBER 1, 1896, AND JUNE 30, 1909.

	RECEIPTS.			HOW DISPOSED OF					
Fiscal year to June 30th	Gross Receipts	Operating Exps. Depreciation of Equipment Taxes and Rentals	Net Receipts	Interest on Mortgage Debt, etc.	Dividends	Improvements	Appropriation for Insurance Fund	Surplus	Total
1897 (10 mos.)	$ 15,197,159.07	$ 9,597,082.17	$ 5,600,076.90	$ 5,110,248.00	.....	.....	.....	$ 489,828.90	$ 5,600,076.90
1898	24,566,914.86	11,778,170.91	12,788,743.95	6,079,160.00	$ 3,000,000.00	$ 811,709.35	.....	2,897,874.60	12,788,743.95
1899	27,050,280.75	13,161,105.57	13,889,175.18	6,079,275.33	4,600,000.00	2,176,619.26	.....	1,033,282.59	13,889,175.18
1900	30,706,839.02	15,358,070.26	15,348,768.76	5,864,950.00	5,400,000.00	3,000,000.00	.....	1,083,818.76	15,348,768.76
1901	33,304,770.48	17,695,185.69	15,609,584.79	6,395,681.25	6,200,000.00	2,011,285.00	.....	1,002,618.54	15,609,584.79
1902	42,231,144.75	22,559,046.74	19,672,098.01	6,624,865.83	8,499,946.00	3,000,000.00	.....	1,547,286.18	19,672,098.01
1903	47,254,655.89	25,604,069.55	21,650,586.34	6,904,696.66	10,074,943.50	3,000,000.00	.....	1,670,946.18	21,650,586.34
1904	48,007,928.68	25,855,687.32	22,152,241.36	6,922,930.15	10,849,989.25	3,000,000.00	.....	1,379,321.96	22,152,241.36
1905	52,644,452.75	28,570,227.84	24,074,224.91	6,947,983.33	10,850,000.00	3,000,000.00	.....	3,276,241.58	24,074,224.91
1906	62,942,821.88	35,468,941.61	27,473,880.27	6,986,140.00	10,850,000.00	3,000,000.00	$1,081,980.16	5,555,760.11	27,473,880.27
1907	70,873,156.61	46,351,304.67	24,521,851.94	7,175,722.21	10,850,000.00	*18,162,597.90*	.....	24,658,727.63	24,521,851.94
1908	72,983,899.47	43,127,501.44	29,856,398.03	10,205,790.25	10,850,000.00	.....	2,784,950.28	6,015,657.50	29,856,398.03
1909	72,614,038.06	40,904,975.66	31,709,062.40	10,043,418.86	14,105,000.00	.....	.....	7,560,643.54	31,709,062.40
Total	$600,378,062.27	$336,031,369.43	$264,346,692.84	$91,340,859.87	$106,129,878.75	$4,837,015.71	$3,866,930.44	$58,172,008.07	$264,346,692.84

NOTE.—The net receipts include interest on bank balances and bonds owned, dividends on stock owned and miscellaneous non-transportation income.

Q. I notice that this statement is divided under two general headings, showing under one the gross receipts and under the other the disposition made of those receipts. That is correct, is it?

A. Yes, sir.

Q. In the gross receipts, what has been included?

A. All the earnings from the transportation business; in fact all the receipts of the company from every source, except as to the capital items and receipts from land grant and so forth.

Q. All of its income?

A. All of its income; yes, sir.

Q. From every source?

A. Operating income and miscellaneous income.

Q. Now, it appears from that statement that up to June 30, 1908, the Northern Pacific Railway Company had net receipts of $232,637,630.44?

A. Yes, sir.

Q. Was that entire total derived from earnings from the operation of the road?

A. No, sir.

Q. Have you prepared a statement showing what portion of that total was not derived from that source, and the sources from which it was derived?

A. I have prepared such a statement; yes, sir.

(Paper marked Complainants' Exhibit 23 (Johnson).)

COMPLAINANT'S EXHIBIT 23 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

MISCELLANEOUS INCOME DERIVED FROM INTEREST ON ACCOUNTS, CASH IN BANKS AND INVESTMENTS IN SECURITIES—SEPTEMBER 1ST, 1896, TO JUNE 30TH, 1908.

INTEREST ON BANK BALANCES AND ACCOUNTS	$6,002,689.17
St. Paul & Grand Trunk Ry. Bonds	1,100.00
Superior Consolidated Land Co. Bonds	2,730.00
Northwestern Improvement Co. Bonds	2,067,666.66
City of Ashland, Wisconsin Bonds	115.00
DIVIDEND NORTHERN PACIFIC EXPRESS CO. STOCK	2,906,263.00
Rocky Fork Coal Company Stock	23,133.00
Oregon Railway & Nav. Co. Stock	239,105.00
Northern Pacific Coal Co. Stock	268,218.43
Puget Sound and Alaska S. S. Co. Stock	92,981.14
Northwestern Improvement Co. Stock	777,000.00
STUMPAGE CUT FROM LANDS IN WASHINGTON	7,492.99
NET RECEIPTS FROM TOWN SITES	14,826.55
Total	$12,403,340.94

St. Paul, Minn.,
April 26, 1909.

Q. It appears from this statement, "Complainants' Exhibit 23," Mr. Johnson, that a total of $12,403,340.94 has accrued to the Northern Pacific Railway Company from other sources than from the operation of the railroad property?

A. Yes, sir.

Q. And that includes interest on bank balances, and dividends on other stocks owned by the Northern Pacific Railway Company, stumpage cut from lands in Washington, and receipts from town sites?

A. Yes, sir.

Q. So that the total net receipts of the railway company for the entire period of its possession of the property, as shown on your Exhibit 22, should be reduced by the total shown on Exhibit 23?

A. Yes, sir.

Q. In order to arrive at the amounts earned or accruing from the operation of the railroad?

A. Yes, sir.

Q. Now, in your Exhibit 22, showing the disposition that has been made of the gross receipts of the Company, there

is shown, under the column headed "Improvements" an item, in red ink, opposite the year 1907, amounting to $18,162,597.90. Will you explain the meaning of that red ink item?

A. The red ink item referred to represents a transfer from income account to capital account. That is to say, that the improvements were temporarily charged to income account and afterwards transferred to the cost of the property under the head of capital.

Q. That is, previous to the year 1907, they had been charged to the improvement account?

A. Yes, sir.

Q. And in that year they were carried over to the capital account?

A. Yes, sir.

Q. And is that the explanation of the large surplus shown as of the year 1907, in the column headed "Surplus"?

A. Yes, sir; it is.

Q. There appears to be a surplus for that year, according to your present statement, of $24,658,000. That amount, then, consists of the actual surplus of that year, plus the $18,000,000 item, shown under the head of "Improvements" here?

A. Hardly that. It represents the net surplus of the accrued that year, plus the amount that was transferred from the improvement account, previously charged to income—to capital account.

Q. That, as I understand it, is the amount shown in red figures there?

A. Not altogether; because there were probably some improvements still left charged to income account,—a small amount.

Q. In other words, then, the surplus for the year 1907 was not the difference between $18,162,597.90 and $24,658,727.63?

A. No, not exactly.

Q. The actual surplus was less than that. There were still other items to be deducted from it?

A. Yes, the surplus was less than $24,000,000.

Q. Well, the sprplus was less than that difference that I have spoken of, wasn't it? If you were to deduct the red ink items shown opposite the year 1907, from the $24,000,000 item shown under the head of surplus for that year, would the difference represent the surplus for that year?

A. It would, approximately, yes.

Q. In the last column, under the head of "Total" there is shown the net revenue for each year during the period—

A. The net income.
Q. The net income.
A. Yes, sir.
Q. And it appears from this statement that during the first 10 months up to June 30, 1897, no dividends was paid on any of the stock of the Northern Pacific Railway Company; and the next year a dividend of $3,000,000—that was 4 per cent. on the $75,000,000 of then outstanding preferred stock?
A. Yes, sir.
Q. The next year the same dividend was paid on the preferred, and a small dividend on the outstanding common?
A. Yes, sir.
Q. And only during the last six years has a dividend of seven per cent. been paid on the entire outstanding capital stock?
A. That is my recollection; yes, sir.
Q. Mr. Johnson, have you prepared a statement showing the capital—that is stock and bonds—outstanding—
A. I want to stop you just one moment. You just put a question to me previously. I want to correct my answer. You asked me if the last column here wasn't net income of the company, or net revenue, on Exhibit 22, and I said "Yes." Well, that is not true. I want to get the answer correct.
Q. Well, you can just answer it. What does that last column represent?
A. The last column on exhibit 22 does not show the net income, but it shows the total net receipts of the company, the disposition of which is shown in the preceding five columns.
Q. And in the total net receipts is included these items that are shown in your exhibit 23?
A. Yes, sir.
The Master: It is the same as the third column, isn't it?
The Witness: The same as the third column. Just balances the statement.
Mr. Donnelly: Yes; it is the total net receipts.
Q. Have you prepared a statement showing the amount of securities outstanding against this property, Mr. Johnson?
A. Yes, sir; I have.
(Paper marked "Complainants' Exhibit 24 (Johnson)".

COMPLAINANT'S EXHIBIT 24 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

STATEMENT SHOWING CAPITALIZATION OF THE COMPANY JUNE 30, 1906, 1907 AND 1908, ALSO MARCH 31, 1909.

	1906	1907	1908	March 31, 1909
Common Stock	$155,000,000.00	$155,000,000.00	$155,000,000.00	$155,000,000.00
Common Stock, Subscription payments	.....	14,721,100.37	62,881,835.97	92,781,710.18
Total	$155,000,000.00	$169,721,100.37	$217,881,835.97	$247,781,710.18
Bonds issued	$172,938,500.00	$173,917,500.00	$174,886,500.00	$176,086,500.00
Bonds assumed	13,337,000.00	12,749,600.00	15,351,000.00	15,351,000.00
Car Trust Notes	70,312.68	36,276.00	2,239.32	.....
Total	$186,345,812.68	$186,703,376.00	$190,239,739.32	$191,437,500.00
Grand Total	$341,345,812.68	$356,424,476.37	$408,121,575.29	$439,219,210.18

The above is exclusive of N. P.-G. N. joint C. B. & Q. Collateral Bonds.

St. Paul, Minn.
April 26th, 1909.

Q. This statement, Exhibit 24, is intended to show all of the securities outstanding against the Northern Pacific property at the end of the fiscal years 1906, 1907 and 1908?

A. Yes, sir; as also March 31, 1909.

Q. Now, on that date, June 30, 1906, there was outstanding $155,000,000 of common stock, and, speaking in round numbers, $186,000,000 of bonds actually issued, bonds of other companies assumed and car trust notes?

A. Yes, sir.

Q. On June 30, 1907, I notice that the capital stock, the common stock, is represented as being $169,721,000 and odd. Will you explain the increase of the capital stock?

A. The 169 millions odd represent the common stock of $155,000,000 shown as outstanding in the previous year, plus $14,721,100.37 cash payments on account of subscriptions to new stock to be issued to the amount of $93,000,000.

Q. That issue of $93,000,000 had at that time been authorized?

A. It had been authorized by the Board of Directors—yes, sir, the stockholders.

Q. And the subscriptions were being paid in upon it at that time?

A. Yes, sir; in installments.

Q. Without giving over these items year by year, on March 31, 1909, the total outstanding common stock, including the original $155,000,000 and $92,781,710.18, on the new stock, represented a total then outstanding of 247 million, odd thousand?

A. Yes, sir.

Q. And the bonded indebtedness at that time, that is, the bonds issued and assumed, was $191,000,000?

A. And odd dollars, yes, sir.

Q. Making a total of securities outstanding against the Company, March 31, 1909, of $439,219,210.18?

A. Yes, sir.

Q. Now, this $92,781,710.18 shown under date of March 31st, 1909, did that represent actual money paid in to the Northern Pacific Railway Company for the new stock?

A. Yes, sir; actual money.

Q. All of it?

A. All of it.

Q. Not discounted in any way?

A. No, sir.

Q. And put into the Northern Pacific property?

A. Put into the Northern Pacific treasury.

Q. And a portion of it has been, up to the present time, put into the property, has it not?

A. Oh, yes, sir; spent for capital purposes.

Q. This statement is exclusive of the Northern Pacific's interest in the Burlington, and does not represent the—

A. Yes, sir; that is excluded from the statement entirely.

Q. Have you prepared a statement showing the percentage of east-bound long haul tonnage moving from the Pacific coast to points east of Billings, along the Burlington and along the line of the Northern Pacific, and showing the relative quantities of that tonnage, consisting of lumber and forest products and of all other products?

A. Yes, sir; I have.

Q. For what years?

A. For the fiscal years 1904 and 1906.

Q. Why was the year 1905 omitted?

A. Because I found that our auditor of freight receipts had changed the form of statistics for ten months, and that blocked me from getting the figures for the entire year.

Q. You say that it blocked you. Did it make absolutely impossible to get that information?

A. Not absolutely impossible, but it would have taken a very long time to have secured the data; and I have my doubts as to whether all the documents necessary to do that are available at this time.

Q. Why have you not brought it down to the years 1907 and 1908?

A. Because, after 1906, we stopped making such statistics.

Q. Would it be possible to do it for the years 1907 and 1908?

A. It would, with a very large force of men and a lot of time.

Q. It would involve an examination of the way bill of each shipment, would it?

A. Practically; yes, sir.

(Paper marked "Complainants' Exhibit 25 (Johnson)".

COMPLAINANT'S EXHIBIT 25 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

STATEMENT SHOWING TONNAGE OF LONG HAUL LUMBER AND SHINGLES AND ALL OTHER COMMODITIES SHIPPED EAST BOUND FROM OREGON AND WASHINGTON WITH RELATION OF EACH TO BOTH.

	Tons Carried.	Percent.
FISCAL YEAR ENDING JUNE 30, 1904—		
Lumber and Shingles	711,530	85.46%
All Other Commodities	121,080	14.54%
	832,610	100%
FISCAL YEAR ENDING JUNE 30, 1906—		
Lumber and Shingles	1,117,721	87.64%
All Other Commodities	157,648	12.36%
	1,275,369	100%

St. Paul, Minn.,
April 26th, 1909.

Q. From this statement it appears that for the fiscal year ending June 30, 1904, the tonnage of lumber and shingles moving from Oregon and Washington East—that is all long haul tonnage—was 85.46 per cent. of the total. That is correct, is it not?

A. Yes, sir.

Q. That is, all of the other commodities, aside from lumber and shingles, only equaled 14.54 per cent. of the total of the long haul tonnage?

A. Yes, sir; that is true.

Q. And for the year 1906 the percentage was 87.64 of lumber and shingles, and 12.36 of all other commodities

A. Yes, sir.

The Master: Is that the haul from Oregon and Washington points, clear through to St. Paul or to Chicago, or where?

The Witness: From Oregon and Washington points, to points on the Burlington and Nebraska, and so forth, leaving our line at Billings, to points on our line in North Da-

kota, Minnesota, Wisconsin, and points south and east thereof, constituting the long haul lumber business.

The Master: Through business.

A. Practically through business; transcontinental business, yes, sir.

Q. Could you, from your knowledge of the statistics of the Company—your general knowledge, Mr. Johnson—state whether or not the figures for those two years are fairly representative of the relative movement of lumber and shingles and all other commodities?

A. I believe they are; yes, sir.

Q. East-bound?

A. East-bound; yes, sir.

Q. Have you, by checking these results with the figures shown in the exhibits introduced by Mr. Woodworth, determined in any way as to their accuracy?

A. Yes. I took the number of acres shown in what is known as Woodworth Exhibit No. 6—

Q. Offered before the Interstate Commerce Commission?

A. Offered in evidence in Washington, in December, 1907.

Q. Just state how you checked these figures?

A. I was going to continue—such statement showing the number of cars of lumber and shingles that were destined via Billings to points on the Burlington, and south, to Minnesota, Dakota, Manitoba and to Eastern terminals and beyond, and by dividing the number of cars in each year—that is, in the years 1904 and 1906—into the tons carried, as shown by my exhibit No. 25, produced an average car loading that was very close to the testimony previously given in the case at Washington—which I believe is fairly good evidence that the tonnage moved, as shown by Exhibit 25, is correct, or approximately correct.

Q. Have you prepared a statement, Mr. Johnson, showing the increase of expense in some of the items incident to the movement of lumber and of other traffic generally?

A. I have made a statement showing a comparison of the cost of operation between the years 1908 and 1907.

Mr. Holden: Do you mean the fiscal years or the—

A. Yes, sir; the fiscal years.

Mr. Holden: Ending June 30.

The Witness: Ending June 30, 1908 and 1907.

(Paper marked "Complainants' Exhibit 26 (Johnson)".

COMPLAINANT'S EXHIBIT 26 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

STATEMENT SHOWING COST OF OPERATION, AVERAGE DAILY WAGE, AND PRICES OF MATERIAL LARGELY USED IN RAILROAD OPERATION AND MAINTENANCE FOR THE YEARS ENDING JUNE 30TH, 1907, AND 1908, WITH INCREASES AND DECREASES.

NOTE.—The expense figures for 1907 and 1908 are both on the basis of Interstate Commerce Commission's classification of Operating Expenses which went into effect July 1st, 1907.

	1907	1908	Increase or *Decrease*
COST PER DOLLAR OF REVENUE FOR—	Cents.	Cents.	Cents.
Transportation Expenses	29.50	30.40	0.90
Maintenance of Equipment	11.27	12.36	1.09
	40.77	42.76	1.99
Mtce. of Way & Structures	13.83	13.17	*0.66*
Traffic Expenses	1.09	1.18	0.09
General Expenses	1.44	1.31	*0.13*
TOTAL OPERATING EXPENSES	57.13	58.42	1.29
AVERAGE DAILY WAGE—			
Transportation Department	$2.77	$2.99	$0.22
Mtce. of Equipment Dept	$2.35	$2.45	$0.10
Maintenance of Way Dept	$1.84	$1.91	$0.07
COST OF IMPORTANT ITEMS OF MATERIAL—			
Coal per ton	$ 2.39	$ 2.45	$0.06
Rails per ton	29.49	29.93	0.44
All classes of ties, except treated ties	.43	.437	0.057

St. Paul, Minn.,
April 26, 1909.

Q. Just state what is shown by that exhibit, Mr. Johnson?

A. The exhibit shows that the cost of transportation expense increased 9 cents for every hundred dollars of revenue.

Q. And by transportation expenses you meant what—just so the Master will get an idea of what is included in that?

A. The expense directly incident to the movement of business.

Q. Wages of men, train employes and so forth.

A. Train employes, yard employes, and what is known as general transportation department employes. That for maintenance of equipment the cost increased $1.09 per $100 of revenue; the total of both being an increase of $1.99 per $100 of revenue for what may be known as the cost of moving the business, including the maintenance of the equipment used therefor. That maintenance of way and structures decreased 66 cents per $100 of revenue. Traffic expenses increased 9 cents per $100 of revenue, and general expenses decreased 13 cents per $100 of revenue. All operating expenses increased $1.29 per $100 of revenue. It also shows a further increase in the average daily wage of men working in the transportation department of 22 cents per day.

Q. Just let us understand that last. That has no relation to the $100 of—

A. No sir; it is an average wage per day.

Q. It is an absolute increase of 22 cents per day?

A. Yes, specific increase in the payment of wages.

Q. Yes.

A. Will I continue?

Q. Yes, go ahead.

A. Men in the maintenance of equipment department, 10 cents per day increase. Men in the maintenance of way department, 7 cents per day increase—all compared with the fiscal year ending June 30, 1907. And a comparison for the same two years shows that the average cost of coal per ton increased six cents; that the average cost of rails per ton increased 44 cents; and that the average price of all classes of ties, except treated ties increased 5.7 cents each.

Q. Does that represent material actually used during that period?

A. Yes, sir; the fuel and rails and ties represent material actually used in operation.

Mr. Donnelly: You may cross-examine.

Mr. Teal: I would say that we will want to call Mr. Johnson for cross-examination at the proper time, but I would like to ask him a few questions on this at this time.

Mr. Donnelly: Now, let us understand about that. Do you mean today?

Mr. Teal: No, not today; no, no.

Mr. Donnelly: Because we expect to close our testimony practically.

Mr. Teal: I understand that. I just want to ask Mr. Johnson a few questions.

The Master: You reserve the right to cross-examine him later on.

Mr. Teal: Yes; because it is manifestly impossible to take figures like this and cross-examine an expert witness.

Cross-Examination by Mr. Teal.

Q. Do you understand anything about the traffic operations of the Northern Pacific?

A. I don't know as I am clear as to what you mean by traffic operations.

Q. I mean, the conducting of operations—or is your business confined to the physical part of the company?

A. My business is confined to the accounting.

Q. You have prepared this table here, complainants' Exhibit 25 (Johnson), showing the lumber movement: I would like to have you state what line, running north and south, would represent the point from which this, which you call long distance haul of lumber—

A. Well, it would be the western boundary of North Dakota, practically, and to points in Western North Dakota we have very little business; and then all the territory south, on the Burlington, in Nebraska, and points south and east thereof, which business we transfer to the Burlington at Billings.

Q. And then that represents movement of lumber and shingles to 40-cent territory on your system, or higher—Isn't that about it?

A. Yes, sir; that is about it.

Q. It does not represent any movement west of that then?

A. No, sir.

Q. Do you know what your total tons were, carried by your entire system, for the fiscal year ending June 30, 1904, and June 30, 1906?

A. I don't know from memory, but I see some annual reports there. Perhaps I can draw it off there.

Q. I thought perhaps you knew for those two?

A. No.

(Pamphlets handed witness.)

The Witness: What is the question?

Q. Take the total tonnage for the year ending June 30, 1904.

A. East and west-bound?

Q. Yes, your total tonnage?
A. The total tons carried in 1904 were 13,283,477.
Q. 1906?
A. In 1906, or rather the fiscal year ending June 30, 1906, the total tons moved were 15,356,312. In each case I speak of revenue business.
Q. Yes, that is what I mean.
The Master: That is, all classes.
The Witness: All classes of business carried by the Northern Pacific.
Mr. Donnelly: Moving in whatever directions, and whatever business.
The Master: Both through and local?
Mr. Teal: Yes; all kinds of business, this is.
Q. Then, your lumber traffic east bound—that is, your long distance traffic, east bound, has been a very considerable portion of your business altogether, hasn't it?
A. Yes, sir; that is true.
Q. Now, commencing with the year 1896, you commence in your statement here, do you not, with 10 months of 1897. Taking your Johnson Exhibit 22, there has been, up until the year 1908, a steady and continuous increase in both your gross receipts and your net, has there not?
A. Yes, sir; that is true.
Q. And the business of the road has expanded and grown continuously, has it not?
A. It has; yes, sir.
Mr. Donnelly: The year 1907, I think, is an exception as to the net receipts, is it not?
Mr. Teal: Well, there may be some reason for that, too. I didn't notice that.
The Witness: It is less than 1906.
Q. In connection with these items of operating expenses, depreciations, equipment, taxes and rentals, I would like to know if that includes the accounts of maintenance of way and structures?
A. Yes, sir.
Q. And maintenance of equipment?
A. Yes, sir.
Q. Does it also include all of the special appropriations made for additions and betterments from 1898 to 1907?
A. No, sir.
Q. Now, where is that shown in this statement?
A. That is shown in the column headed "Improvements" under column Number 6 of the statement.

Q. That is shown under that column?

A. Yes, sir.

Q. Can you state how much per mile of road has been charged each year to maintenance of way as an operating expense account?

A. I cannot, off-hand; no, sir.

Q. And the same way as to maintenance of equipment?

A. Excuse me, a moment—I just wanted to know if you knew.

A. I could not give you those figures off-hand.

Q. This additional stock issue that has been sold from 1907 to 1909, was that subscribed for and paid for at 100 cents on the dollar?

A. Yes, sir; as far as I know.

Q. Not at the market value of the stock at the time it was delivered?

A. No, sir; as to that I cannot say exactly, because the price of the stock fluctuated very much, or has fluctuated very much in the last few years.

Q. The only point I was making was it was paid for at the par value?

A. It was paid for at 100 cents on the dollar; yes, sir.

Q. This statement, marked Petitioners' Exhibit 24, (Johnson), shows that the common stock was issued to the amount of $155,000,000, and was in existence prior to 1907. When that was originally issued, with the organization of this company, there was a preferred stock of $75,000,000, and a common stock of $80,000,000, was there not?

A. That was the starting point of the company, as I remember it.

Q. Can you state how much money was paid to the company for that stock, or any portion of it?

A. No, sir; I couldn't.

Q. Do your books show just exactly what was received for that stock?

A. No, sir; I don't believe they will. It was all based on the plan of reorganization, which I believe has been in evidence in this case.

Q. And you think that if, for instance, a lot of that common stock was sold for $15 a share, to anyone, that your books won't show it, if it was sold out of the treasury?

A. The officers of the Northern Pacific Railway Company, as I understand it, did not issue that stock. It was issued by the reorganization committee, or the Trustee.

Q. And you know nothing of that at all?
A. No, sir.
Q. Nor your books will not show it?
A. I don't think they will.
Q. Now, at that time, there was $129,816,500 of a mortgage debt, and then there were other bonds issued at the same time—Can you state how much cash?
A. Of what date are you speaking?
Q. The date of reorganization. How much cash was received?
A. No, sir; those matters were entirely in the hands of the reorganization committee.
Q. You have no report in your possession from the reorganization committee, showing just how this capitalization was created, what money was paid in, and the details of that reorganization?
A. No, sir; I haven't them in my possession.
Mr. Donnelly: Well, the detailed plan of reorganization has been submitted to the Interstate Commerce Commission. They had it in the Spokane rate case, and they had it in a number of cases. I think they are thoroughly conversant with it.
Mr. Walter: The report of the reorganization committee—is there any way in which you can furnish that—what they did with stocks and bonds and money?
Mr. Teal: I don't care to go on with this, if the witness don't know. I don't want to take up time with him on something he don't know about, because there will be plenty of time to look this up later.
Q. I notice here, Mr. Johnson, that there is no account taken of the Burlington collateral bonds, issued for the purchase of one-half of the stock of the Burlington by this Company?
A. No, sir; it is not included at all.
Q. That is a mortgage debt of this Company, is it not?
A. Not as I understand it; not of the Northern Pacific.
Q. Is it a debt of the company at all?
A. As I understand it, it is nothing but a guaranty on the part of the two companies—the Northern Pacific and Great Northern.
Q. And who is the obligor on this bond who has agreed to pay it?
Mr. Donnelly: That, I think, is an inaccuracy; but then it does not profess to be correct—as to the nature of the obligation of the Northern Pacific. But he does not profess to be

stating the character of that obligation. You don't understand?

The Witness: No; I have never seen the bond nor read the mortgage, nor am I conversant with any of its details.

Q. And in connection with these figures, which you have filed here, no account is taken in any way of any interest that the Northern Pacific has in the earnings of the Burlington?

A. Not at all; no, sir.

Q. And if the earnings of the Burlington and the surplus were millions none of that appears in here?

A. No, sir.

Q. But you do show the dividends paid, do you, of all other stocks and interest on bonds, and revenue received from all other sources than the Burlington?

A. Yes, sir.

Mr. Donnelly: That is, of all other revenue received by the Northern Pacific Railway Company?

The Witness: Yes, sir.

Mr. Teal: Yes, he understood that when I asked him.

Mr. Donnelly: That is all, Mr. Johnson.

Mr. Walter: We will try to let you know as soon as we can when we can take up the cross-examination of Mr. Johnson.

Mr. Teal: We will take it up when we start in again.

Mr. Donnelly: Yes, when you start in with your testimony.

Mr. Walter: Let me ask Mr. Johnson one question. This statement on Exhibit 25, as to commodities, refers only to traffic commodity rates, not class traffic?

The Witness: No, sir; it is of a traffic originating in Oregon and Washington, destined to the same general territory as the lumber and shingles.

Q. And doesn't have reference to the technical meaning of the word "commodity," in rate meaning?

The Witness: No, not as that word is known in rate meaning and tariffs. It is included in there.

Mr. Holden: I want to offer an exhibit which I will ask to have marked Great Northern Exhibit 27.

(Said paper was so marked.)

COMPLAINANT'S EXHIBIT 27 (G. N.).

GREAT NORTHERN RAILWAY COMPANY.

STATEMENT OF LOADS EASTBOUND THROUGH CASCADE TUNNEL FROM MAY, 1907, TO OCTOBER, 1907, INCLUSIVE; DIVIDED BETWEEN LUMBER, SHINGLES, FOREST PRODUCTS, ETC., AND OTHER COMMODITIES AND THE PERCENTAGE THAT LUMBER, ETC., BEARS TO THE TOTAL.

Month.	Lumber Shingles, etc.	Other Commodities	Total Loads.
May, 1907	2,855	834	3,689
June, 1907	3,612	626	4,238
July, 1907	3,671	716	4,387
August, 1907	3,458	777	4,235
September, 1907	2,693	727	3,420
October, 1907	2,774	806	3,380
Total	19,063	4,486	23,549

19,063	Lumber, etc	80.95%
4,486	Other Commodities	19.05%
23,549	Total	100.00%

Accounting Department,
Train Statistics Office.
4-7-09.

JS.

Mr. Holden: I want to offer this exhibit. This exhibit is based upon McGuire Exhibit No. 1, offered before the Commission at the hearing in December, 1907. That exhibit showed the actual number of loaded cars moving east bound during the months of May, June, July, August, September and October, 1907; and of those loaded cars I have had a division made by an examination of the records to determine what of those were lumber and what were other commodities; and that is what this Exhibit 27 shows.

The Master: It shows the percentage of the lumber traffic.

Mr. Holden: I offer this at this time subject to check,

and tender a witness, if desired by the other side, to explain the basis upon which it is made, and also tender our records upon which the exhibit rests, for examination.

HOWARD ELLIOTT, being duly sworn as a witness on behalf of the complainants, testified as follows:

Direct Examination by Mr. Donnelly.

Q. Mr. Elliott, you are the President of the Northern Pacific Railway Company?

A. Yes, sir.

Q. And have been for how long?

A. Since April 21, 1903.

Q. What has been your experience with the railroad business, Mr. Elliott, how long and in what capacities have you been connected with it?

A. I first began working for the Chicago, Burlington & Quincy Railroad Company on the 5th of July, 1880, in the capacity of level rodman. I worked in that capacity for three or four months. I then went to the Lawrence Scientific School at Cambridge, and took my degree as a civil engineer. In the autumn of 1881 I was a clerk in the vice-president's office of the C., B. & Q. Railroad Company, at Burlington, Iowa, for three months. On or about January 1, 1882, I went to Keokuk, Iowa, and was cashier of two small roads controlled by the Burlington Company known as the St. Louis, Keokuk and Northwestern Railway Company and the Chicago, Burlington and Kansas City Railway Company. I served as such cashier until the 15th of November, 1882, when I was appointed auditor and assistant treasurer of those two roads. I served in that capacity until January 1, 1887, when I was made general freight and passenger agent of the same two properties. On or about January 1, 1896, there was added to my jurisdiction, as general freight agent, what the other roads belonging to the Burlington Company, known as the Kansas City, St. Joseph & Council Bluffs Company and the Hannibal and St. Joseph Railroad Company, and I gave up jurisdiction over the passenger department. As general freight agent of those four roads which were operated as a so-called grand division of the Burlington Company, I had charge of the freight business on those roads in Missouri and Southern Iowa, something over a thousand miles of railroad, and also had charge of all business originating and terminating south of the Ohio River,

and east of a line drawn North and South through Kansas City, and destined to and from all points on the Burlington system I was general freight agent until 1896. I then became general manager of the same four railroads and served in that capacity until sometime in the spring of 1901, when I was elected second vice-president of the entire Burlington system, in charge of maintenance and operation, and all of their properties. I remained in that position until I was elected to the presidency of the Northern Pacific Railway Company.

Q. In October, 1903?

A. In October, 1903.

Q. During the 5½ years that you have been president of the Northern Pacific Railway Company have you become familiar with the Northern Pacific system?

A. I feel I have become reasonably familiar with the system. We have, as you know, large mileage and cover a great deal of territory. I have been over all parts of the road a number of times and over certain portions of it a great many times. I have also studied the territory tributary to the lines of the company, and have tried to inform myself as to its resources and the possibilities of the development of commercial business that would enable the Northern Pacific Company to grow and develop.

Q. Are you familiar generally with its terminal properties?

A. Yes, sir.

Q. And more particularly with those at Seattle, Tacoma and Spokane?

A. Yes, sir. I may say I am very familiar with those.

Q. It has appeared in the testimony of Mr. Cooper here that there is, at Spokane, at Tacoma and at Seattle, a quantity of land included in the land designated by him as the terminal properties of the company, at those places, which is not now in actual use. Will you explain why it was that that land was acquired, and what, in your judgment, was the necessity for acquiring it?

A. The Northern Pacific Company has, at Tacoma, Seattle and Spokane, large terminals, a large portion of which is in very active operation and use for the conduct of the commercial business of the company, and it also has acquired, from time to time, additional pieces of real estate, the location and area of which are such that they can be used for the addition to and enlargement of the existing terminals as the western country grows and makes such additional terminals necessary. Those additional terminals were bought, some, before I was associated with the management of the property, and

some since, for the very good reason that the owners of the Northern Pacific, in common with the owners of other property in the United States, realize that the country is growing, and they have tried, so far as their means and judgment would permit, to look ahead and acquire property that would protect the future, and hold that property in readiness for transacting the business of the company as it grows; also for the reason that if such properties had not been acquired ahead of time it probably would have been very difficult, and no doubt at times impossible, to buy a property when the urgent necessity arose for its acquisition.

Q. Then, in your judgment, is there any of this property not now in actual use that will not be required by the railway company for terminal purposes within a comparatively short time?

A. It is hard, of course, to foretell exactly the course of the growth of business of any given railroad system, but in my judgment, from such knowledge as I have of the growth of the western country, I feel that all of the property that the company has purchased since the reorganization will be needed, and is so located that it will be used sooner or later for terminal purposes.

Q. Do you consider that any unreasonable purchases have been made in that regard—that is, that any purchases of land have been made which are nto likely to be used for the purposes for which it was acquired?

A. I think not.

Q. You have seen the statement prepared by Mr. Darling, showing the cost of reproduction of the Northern Pacific Railway as of April 12, 1909?

A. Yes, sir.

Q. And you have gone over his method of the construction of that system, as it is shown in that exhibit, in which it is stated by him that in his judgment it would require 12 years for the completion of the railroad as it stands today?

A. I have not discussed with Mr. Darling in detail the preparation of this particular statement, but I have discussed with him a number of times the general subject and went over with him some of the details of the previous statements, and have talked with him on numerous occasions about the general idea of what it would mean to reproduce the Northern Pacific Railway system as it stands today.

Q. Now, in your judgment, and from your familiarity with the system, as it stands, what have you to say as to

the period of time allowed by him for the construction of that road in its present condition?

A. My judgment is that if a party of gentlemen undertook to reproduce the Northern Pacific system and have it in the condition it is today, that they would be extremely able men if they could reproduce it in twelve years.

Q. You think, at any rate, that it could not be reproduced in less time than that?

A. I doubt it very much.

Q. Well, if a party of men were to start to reproduce the Northern Pacific Railway, in your judgment, what interest would they be required to pay upon the money used in its reconstruction?

A. I understand that Mr. Darling, in making up this statement of April 12, 1909, has used a basis of 6 per cent. It may be that a party of men, of sufficient financial strength, could be gotten together, so that they could engage in an enterprise of this magnitude and carry it on at that rate of interest. If they did, I should think they were doing very well, indeed. I should think they might have to pay more.

Q. In other words, that if bonds carrying interest at 6 per cent. were to be issued in exchange for the money used in constructing the road, you would think that they were very fortunate if they received the par value of the bonds?

A. I should think they were very fortunate.

Q. Supposing the bonds would carry only five per cent. interest, Mr. Elliott. About what amount would you think would be realized on such bonds?

A. I doubt if on a new enterprise of that magnitude a 5 per cent. bond on a new institution would sell above 90. From 85 cents to 90 cents on the dollar.

Q. Assuming that this railroad could be reproduced within 12 years, and in accordance with Mr. Darling's scheme of construction, and that at the end of the 12 years it was completed, and in the condition in which it stands today, what is your judgment as to the likelihood of that property being able to earn, for the entire property, during that period of 12 years, any total in excess of the total cost of the operation of the entire property? You can develop your answer to that just as fully as you wish, Mr. Elliott?

A. I should doubt very much whether, taking a brand new property of that character, it would earn enough money to pay the necessary operating expenses and to make good the necessary failures that any new road develops, when it goes into operation, and to pay the taxes which would accrue upon

it, and have any material sum left over for the payment of interest.

Q. Take the Portland and Seattle Railroad, as a specific example: Is that road now in operation, Mr. Elliott?

A. It is in operation between Portland and Pasco.

Q. And has been for about how long?

A. I think it has been in operation about six months; I don't remember exactly.

Q. How long since the construction of it was begun?

A. What you might term the actual construction of the road was begun in the summer of 1905. That is to say, those gentlemen who were charged with the duty of deciding the large questions of that character came to the conclusion, during that summer, to go ahead, and began to get the necessary rights of way and make arrangements to build the railroad. It is fair to say that for many years prior to that date steps have been taken in the direction of creating that property; there was a great deal of preliminary work done in 1899, 1900, all along, a great deal of accumulated information was obtained, so that when what you term actual work was begun, late in the summer of 1905, they were able to proceed much more rapidly than if they had started right then as a brand new proposition.

Q. Now, that is an exceptionally well constructed railroad, is it not, Mr. Elliott?

A. Yes, sir.

Q. And running through a comparatively rich country?

A. Well, it runs along the Columbia river, which, in time, will develop a territory where there is lumber, and in which eventually a very large amount of fruit will be raised.

Q. Has that railroad, during the period that it has been in operation, paid anything in excess of operating expenses?

A. It has earned nothing in excess of operating expenses and taxes. I could not say off-hand whether there has been anything over and above the actual operating expenses.

Q. Take the lines of the Northern Pacific Railway Company in the State of Minnesota today. Under Mr. Darling's scheme of construction of a railroad, he assumes that at the end of the fifth year those lines of the railway company in this state, that are now in existence would have been constructed and in a temporary condition for the benefit of traffic; that is, that there would be a line from St. Paul to Fargo, a line from St. Paul to Duluth, and from Duluth to Staples. I understand his plan to assume that there would not be any sidings or branches in at that time. But, taking the railway as it stands today,

and assume that it was in a condition simply to care for traffic over the lines within this state, what, in your judgment, in view of the existing rates, would be the likelihood of that railroad at the present time earning anything in excess of operating expenses?

A. My judgment is it would be lucky if it earned its operating expenses, under the conditions that you outline.

Q. You are familiar with the Lewiston branch—I think it is—of the Grangeville line in Idaho?

A. Yes, sir.

Q. Has that line been in operation for some time?

A. It has been in partial operation. The road is hardly completed. We, at the urgent request of the citizens of Lewiston and of the plateau back of Lewiston, to which country that line is built, opened the road for traffic before the road was completed, and we suffered a large loss by so doing, because the expense of moving the business was far in excess of what we paid for it. It is a very heavy grade line, going up onto a high plateau, back of Lewiston. The road is not completely ballasted. We had to run ballast trains and do a good deal of work at the same time we were trying to move wheat out and merchandise in. The result was that we increased the cost of finishing the road. We handled the business very badly, and at a high expense, and we dissatisfied everybody, even including the people who were so urgent that we should begin to open the road.

Q. How long was that road?

A. The new railroad is approximately sixty miles long.

Q. Right in that connection, and in view of what you say of the difficulty of doing business over a line in that state of completion, what have you to say as to whether or not material can be carried over a line in course of construction at any rate less than the tariff rate now in effect?

A. My experience in the last five years here on the Northern Pacific, where I have had more to do with construction of large works than I had in my previous railroad experience, has led me to the conclusion that assessing against the cost of a railroad the normal freight charges, or tariff freight charges, for transporting such material and supplies as are used in the construction of a new line is rather below a fair charge to the cost of such property than above, especially when the haul is partly over a piece of partially constructed road. The expense of doing the business is very great, and the interference with the conduct of their construction makes insensible addition to your cost that you cannot perhaps com-

pute in money, but you know it is great delay to trains, great breakage to equipment, making the cost very much higher than what are called tariff freight charges.

Q. Then in point of fact, if it were possible to utilize another line for the carriage of the material and supplies used in the construction of a line such as the Northern Pacific, what would you be disposed to do, Mr. Elliott?

A. I should be disposed, in a great majority of cases, to use the other railroad and have them deliver the material to the nearest point to the work, paying them whatever they charged.

Q. What, in point of fact, has actually been the practice in connection with the construction of such lines as the Milwaukee? Have they utilized other lines in the carriage of their material?

A. Yes, the Milwaukee used the Northern Pacific very freely in the construction of their road, and delivered large quantities of their material to the Northern Pacific at different junction points.

Q. Now, take a property like the Northern Pacific, and assume that it had just been completed in the manner outlined by Mr. Darling in his testimony, and that it was actually in the condition, both as regards the railroad itself and all of its appurtenances and facilities, that the Northern Pacific Railway is in today, but that it had no antecedent history at all, and was simply a new railroad, but in the actual physical condition that the Northern Pacific is in at the present time: would such a property as that have the value that the Northern Pacific Railway has today, and if not, why?

A. In my judgment the Northern Pacific, if reproduced today as a piece of physical machinery, complete, in its details, as outlined in your question, but with no antecedent history, and with no commercial development, of which it had been a part, would be worth very much less than the property is today, with the growth of business about it, and the accumulated influence and momentum of quite a long number of years of business activity.

Q. Is the Northern Pacific Railway located favorably or unfavorably with regard to the territory through which it passes, and the points of commercial importance in the states through which it passes?

A. That question calls for possibly a little general statement of our property, and I can best answer it, perhaps, by

trying to make such statement as briefly as I can. Shall I do that?

Q. Yes, if you please.

A. To begin with, the Northern Pacific, extending from the head of the Lakes and from the twin cities to Puget Sound and the Columbia River Basin, has a profile for its transcontinental line, which is slightly better than any transcontinental line in the country. So that when you compute the resistance that must be overcome in order to move a ton of freight, or a car of freight the whole length of its railroad, and the amount of energy that it must exert, in order to do that, is somewhat less than other transcontinental roads must exert. That in itself is an element of value. The Northern Pacific is unusually well situated in that it has unsurpassed terminal facilities at the two great ports at the head of the Lakes,—Duluth and Superior—where the large exchange is made between rail and boat. It has unusual facilities there for reaching all present and prospective industries. It has unusual facilities for making connections with any other carriers to and from those two points. At the twin cities—St. Paul and Minneapolis—it has very fine terminal properties, and is well equipped for reaching industries here and for exchanging business with other carriers reaching the two points of St. Paul and Minneapolis, and through what is known as the Minnesota Transfer yards—an agency for the more rapid interchange of freight between connecting lines.

Going west from the head of the lakes and the twin cities, the lines of the company are situated in a good portion of Minnesota, where there is a miscellaneous commercial business of all kinds as good as that on any other railroad in the northern half of the state, and passing through a great many thriving towns and good counties, the railroad enters North Dakota and the Red River Valley, and it main line is through a reasonably good portion of North Dakota, but it has many branches in that state between the Red River and the Missouri River that bring to its main line agricultural products, and which open to the merchants and manufacturers on its line and elsewhere a good consuming market, because of the good country that these branch lines serve.

Going west of the Missouri river and as far as Billings, Montana, the road runs, for a portion of the way, from Bismark, North Dakota, to Glendive, over a rather rugged country, where, however, large quantities of grain are raised, a great many cattle are raised, and a very steady development of population and industry is taking place. At Glen-

dive, Montana, the road enters the Yellowstone valley, which is now a very productive and fairly well populated valley, and which is growing very rapidly, because the soil is of extremely good quality, and, with irrigation, very large agricultural crops can be raised. Outside of the irrigated areas in the Yellowstone valley there is a very large amount of first class tillable soil upon which crops have been raised in the last few years, without irrigation, and upon which there is every reason to believe that careful farming methods will produce a constantly increasing supply and agricultural output. In addition to that, in that part of the country there are large production of cattle and of sheep. When you get to Billings, Montana, or near Billings, Montana, the company has some branches that go down into two very productive little valleys—productive not only because of the cattle and sheep which are produced there, but also because of large coal tonnage that is produced and is shipped, both for the use of the railroad, and for the use of the citizens of Montana and west.

At Livingston, Montana, we approach the first range of the mountains that the company crosses, known as the Belt Range, and immediately before crossing those mountains, there is a branch, some 60 miles long, which goes to the Yellowstone National Park, and reaches the park at what is considered the official entrance of that national playground. There is induced over the Northern Pacific road, because of that national park, a very large passenger travel, and that travel is an asset of considerable importance to the railroad, in two ways: First, because the people travel over the road, as passengers, to visit that wonderful region, and, second, because such travelers see the country, study it, and in that way attract attention to the country, as a region for successful residence, either for health or for business. After crossing the Belt Range of mountains, the company enters the Gallatin valley, one of the tributaries of the Missouri river, and this Gallatin valley is one of the most famous agricultural districts in the Northwest. They raise very unusually fine crops of wheat and oats and barley under irrigation, and also good crops on the slopes of the mountains, without artificial irrigation.

After passing through the Gallatin valley the road has two bows, as you might call it, one running through Helena, Montana and around to Garrison, and one through Butte, Montana, and around to Garrison. The company has unexcelled terminal facilities in both Butte and Helena, and is in a posi-

tion, especially in Butte, to get the maximum amount of business to and from the mining camp, assuming that the rates and service offered by the company are equal to those offered by any other company.

We have in Montana, from the bow that goes to Butte—we call it a main line, not a branch—from that part of the main line we have several branches going into very productive little valleys where there is good agriculture—wool and some slight amount of mineral.

West of Helena and Butte there are three small branches that are not to-day particularly productive, although one of them produces a good deal of agriculture. The reason those three little branches are not particularly productive is that the mining operations in the territory for which the branches were built have not proved very successful up to the present time. There is, however, a great deal of mineral on all three branches, which may at any time be developed and produce a satisfactory mineral tonnage.

From Garrison westwardly to Missoula the company runs through what is known as the Hell Gate Mountain, which is not in itself a very productive piece of territory, but this part of the road is a very fine piece of railroad that has just been double tracked with low grade, and which is the throat, so to speak, of all business that moves between a point west of Missoula, Montana, and east of Garrison, Montana.

Missoula is a very thriving, growing city, in the Bitter Root Mountains, and at that point the company has two very valuable pieces of property—one known as the Bitter Root branch, running some 60 to 70 miles south, into a valley where there is a large amount of production from irrigation, and from natural farming, also a large amount of timber. Westwardly we have a branch into what is known as the Coeur d' Alene mining region, where we have large tonnage of mineral, considerable lumber, and this branch now is also used in connection with the newly constructed piece of railroad as an alternate main line, meeting the older main line of the company at a point called Paradise.

From Missoula westwardly the old main line goes over a spur of the Bitter Root Mountains, on rather a heavy grade, and through the Flathead mineral reservation to this point Paradise, where this last described line meets it. The reason for building the last described line was to avoid this heavy mountain climb, and the construction of that piece of railroad enables us, in part, to have this favorable profile for the movement of transcontinental freight.

The road runs from this point Paradise to Spokane mainly in the drainage of the Columbia river. That is to say, it follows down the Clark's Fork of the Columbia, but through a region where there is not a high development at all points where there is considerable timber business, some mineral, and a pretty steady growth of the production of fruit.

Then the company approaches Spokane, which is in the center of what is commonly known as the Inland Empire—a very productive portion of the United States. It, roughly speaking, is bounded on the north by the Canadian boundary, on the south by the Snake and Clearwater rivers, on the west by the Columbia, and on the east by some of the outlying spurs of the Rocky mountains. In that so-called inland empire are the most productive wheat areas in the country, very fine fruit valleys, a great deal of timber, and considerable mineral. The company's property in Spokane cannot be equalled by any other carrier, and could not be equalled by the Northern Pacific if they should attempt to obtain them now.

Radiating from Spokane the company has one branch westwardly through the wheat fields in what is known as the Big Bend country, and southwardly branches going through the famous wheat growing country, and down into the Clearwater valley, up the Clearwater and up onto this prairie back of Lewiston, all of which country, to-day, is producing grain, some fruit, timber, and some mineral. The main line of the company runs southwesterly from Spokane to Pasco through a region which is very largely in wheat, although 10 or 15 years ago it was thought wheat would not grow there; but a large part of the country tributary to that main line now produces very good crops of wheat.

At Pasco the company crosses the Columbia river and runs northwesterly to the base of the Cascade mountains, going through the Yakama valley, which is one of the best and most productive of the irrigated valleys in the country. There are in that valley approximately 500,000 acres of land, which are either under water now, or that can be put under water from the irrigation schemes which are now under consideration. The company's lines lie in the Yakama valley in such shape that they get a maximum portion of the production of the land, that is now under irrigation, and they are so situated that branches can be built, when necessary, into other irrigated areas, as the fruit raising develops.

After reaching the base of the mountains the company passes through a very productive coal field, which coal, how-

ever, is used quite largely for the company's own purposes, although there are several producing mines on the east slope of the Cascade mountains, which furnish fuel as far east as Spokane, Walla Walla and Lewiston.

Diverging southwesterly from Pasco the company has a number of branches over towards the base of the Blue mountains, going through what is known as the Walla Walla district, which is a great wheat belt, with a great deal of irrigated lands in the river valleys—a most productive area in the way of tonnage of wheat, fruit, and the consumption of merchandise and manufactured articles.

After crossing the Cascade mountains, the company drops down on the west slope and reaches every Pacific coast and Puget Sound point of any importance. It has branches to other coal mines on the west slope of the Cascade mountains, some of which it owns, and many that are owned by private parties, and it has a large coal tonnage for its own use and for the growing communities that are west of the mountains. Its branch lines in Western Washington also go through as good a lumber and shingle producing territory as there is in Western Washington. Its terminal facilities and general position in Seattle, for the purpose of doing business, are unexcelled, and could not to-day be duplicated. The same thing may be said of Tacoma. The company is also very well located at the growing city of Everett, at Bellingham, and on its line from Seattle northwardly toward the Canadian boundary, the road goes through a good lumber producing country, which, as the lumber is cut off, is developing agriculture in a very successful manner.

Southwardly from Tacoma the main line of the company runs to Portland, passing through a good country where there is fruit, timber, some general lumbering, some manufacturing; and at Portland the company has a good position in the way of facilities and commercially. The company is so situated that it is in a position to furnish a transportation machine for transporting people back and forth through all the states, beginning with Wisconsin and ending at Oregon, which is unexcelled.

It is also in the same position for the exchange of commodities, that if the people in those states may wish to sell to people in other states, or may wish to buy from people in other states. The company has along its line a majority of the good towns that have developed in the last 25 to 40 years in the various states, and on account of its position in being the pioneer transcontinental road in this part of the

country the growth of business in those various towns has been about the rails and about the terminal facilities of the Northern Pacific. For example, the state capital of a number of the states is on the line of the railroad, showing that population is rather tributary to our company. A great many of the state colleges are at stations of the Northern Pacific. At Bozeman, a very fine agricultural college; Missoula, the State University of Montana; Moscow, Idaho, the State University of Idaho; Pullman, Washington, the agricultural college; Walla Walla, Washington, the largest private university in the state; Olympia, the capital of Washington, is on the company's rails; at Fargo, the state agricultural college. Of course, at St. Paul and Minneapolis we have centered here, and divide naturally with other companies, the influence of the great aggregation of population here; but we have, what I call, the basic elements for a successful railroad to a marked degree, namely, a railroad with a good profile for transporting business on its main line.

Secondly: the occupation of a territory that contains today a good population and which has all the elements that will support a constantly increasing population. We have the best educational facilities immediately upon our line, or very close thereto, in all the states through which we go, so that those who are more or less successful in life are in a position to care for their families in a wholesome and satisfactory manner. We have raw material in the way of lumber and coal in a very marked degree. We have very fine agricultural areas tributary to our road in every state through which we run.

Then, we have an element which no new road could possibly have, and that is a reputation which has been established by long years of honest effort on the part of the officers and employes of the Company to place its advantages before the traveling and shipping public and before the business men. The company has spent, since about 1880, I think it is, nearly nine millions of dollars in advertising and exploiting itself before the American public. That means it has extended a knowledge of its existence to a constantly widening circle of people.

The Company also has a development of markets, which means a great deal to the business man living upon or near its rails. Through its half ownership in the Burlington and its controlled roads it places all of the producers on the Northern Pacific in most favorable connection with the great consuming and producing population in the states in the Missis-

sippi valley, and in Colorado, and as far south as Galveston, Texas.

That idea of markets is a very important one and means a great deal in the value of a railroad, because a man who is going to saw lumber naturally wants the widest market he can get to sell his lumber. The Northern Pacific gives it to him. If he is producing fruit, he wants the widest market in which to sell his fruit. The Northern Pacific gives that to him.

The location of the Northern Pacific also is, on the whole, extremely well devised to serve the states through which it runs, now and in the future. With its main base lines east and west across the country, it is in a position to add to its property with lateral lines and branches in such a way that it will serve a constantly growing country and protect, not only its main line, but open up new areas where people can live and produce and consume.

Now, the only way a railroad can live at all, of course, is to have as many people as possible who are making use of the railroad, either by traveling or by producing something that is shipped or by consuming something that is shipped. I claim the Northern Pacific is in a peculiarly strong position to furnish to the future a territory where there will be a very large use of its rails by people who will travel, who will consume and who can produce.

There is one other element that is important in any business enterprise, in considering its value, and that is that, since the receivership—I cannot speak before that—there has been a consistent and harmonious management in the Northern Pacific in its effort to realize its responsibilities in trying to serve the public fairly and faithfully, believing that by so doing it would better serve its owners; and I think I am safe in saying that the Northern Pacific has established a reputation in the territory where its rails are and in other parts of the country where it seeks business; that it has established a reputation for fair dealing, for reasonable and careful treatment of its patrons, and for reasonable and satisfactory service. That, in itself, is an element of value which is of great value. You cannot measure it in dollars and cents, but it is an element that no new railroad, even if it had all the physical advantages that the Northern Pacific has to-day, could acquire. We have, as I say, spent something like nine millions in placing advantages of our railroad and our country before the American public. We have spent 12 years in an honest endeavor to serve the shipping and traveling public reasonably

well, and have established this reputation for reasonableness and honesty in our dealings.

Now, all any business man can expect in these days, when most everything is equal, is a preference from the intending customer, assuming that your rates and service are as good as those furnished by others. We claim our rates are equal to those furnished by others. We claim our service is, if anything, a little better than that furnished by others, and we believe we have a very large preference in a great many sections of the country which we serve. We have, I believe, what lawyers and doctors call "seconds". If a doctor treats his patient well, why, that patient recommends that doctor to someone else, and his business grows. Now, we have a very large number of "seconds" and "thirds" and "fourths" all over the United States, not only in our own territory but in outside territories. So I should say that, strategically, territorially, physically and in a commercial way, our position is such that our property is far more valuable as a business enterprise and as a going concern to-day than it would be if it was created and turned over to anyone to start in and begin to do business, even with the splendid facilities that would be handed to the management at that time.

Q. Now, speaking of the value that it has, Mr. Elliott, by reason of its being the pioneer line: You referred in your testimony in the Minnesota rate case to the Milwaukee road as an illustration of the advantage that accrues to such a line. I wish you would just explain wherein that advantage lies.

A. Well, that is a very well known example in this part of the country. Those who have lived here longer than I could testify better about it; but it is well known that the Milwaukee and St. Paul was the pioneer passenger line between Chicago and the Twin cities, and their crack train, I believe they call the "Pioneer Limited." They have always given very good service, indeed, prompt, regular, good railroad, and they have had the cream of the passenger business between the twin cities and Chicago for a great many years. Following that, they have had a very liberal patronage of the freight business moving between Chicago and the twin cities. Other roads have come in, very good ones—the Chicago & Northwestern, C., B. & Q., Rock Island and others, and they have all worked hard for this same business. But, in spite of all the hard work that the other roads have done, and in spite of the fact that to-day, physically, those other railroads will give the intending passenger, or the intending shipper, just as good rates, and just as good service as the Milwaukee & St. Paul will, the accumu-

lated advertising, the accumulated commercial momentum of the St. Paul road attracts to it a more liberal portion of the Chicago-Twin City business than any of the other roads. They are all making very earnest efforts all the time to get an increasing share, but the Milwaukee & St. Paul rather is the preeminent line, and not due to-day to the fact that they are any better, but due to the fact that people know all about it. Right here in St. Paul many of my personal friends—people who naturally desire to be friendly to me, and who knew I was on the C., B. & Q. and that the road I now represent is interested in the C., B. & Q.—I say to them, "How are you going to Chicago?" "Well, I am going over the St. Paul." "Why don't you go over the C., B. & Q.?" "Well, I like the C., B. & Q. but always have traveled on the St. Paul and will keep it up." It is merely that knowledge that accumulates with years, and the incoming railroads have to get it from a growth of younger people who come up who do not have the past history to influence them. Now, the Northern Pacific has a very strong asset in that very idea. People are accustomed to use the railroad between the East and the West, and it means a great deal, because, while the passenger business in itself is of doubtful net value, it is of value in that people who travel on their road become acquainted with the country, the chances of doing business, and, as I have already said, the only way we can succeed at all is to have the maximum population upon our road, who will travel, and who will produce something, and who will consume something; so everything we can do to increase population along our rails we want to do.

Q. Calling your attention, Mr. Elliott, to item No. 33 on the first page of Mr. Darling's exhibit, the item "Contingencies"—you will observe there that he takes 10 per cent. of the sums represented by the 32 preceding items, making a total of $41,639,747.50, which he allows for contingencies. In view of your familiarity with the Northern Pacific and of your railroad experience, what have you to say as to the necessity of an allowance such as that for the reconstruction of such a system as the Northern Pacific Railroad, for contingencies in its reconstruction?

A. I don't know, of course, the mental process by which Mr. Darling arrived at his results. I feel quite confident, however, from my experience, that an item of 10 per cent., to cover unforeseen expenses and unexpected events in the construction of a large piece of property, as large as is described in this exhibit, is not, in my judgment, too high. I should be inclined to think it was too low.

Q. Have you any specific instances in mind, Mr. Elliott, of the construction of pieces of road of the Northern Pacific during the period that you have been the executive head of the road, where an allowance of some such amount as that has been found to be inadequate in actual experience?

A. Yes, sir.

Q. I wish you would just give those instances.

A. This road that you call the Lewiston Road, which is built from a point not very far from Lewiston up onto the plateau country some 2500 feet above Lewiston, is a very striking instance of that. That road was talked about probably 10 years ago, and some four years ago a decision was reached to construct it. A great many surveys had been made from the Clearwater valley up the different canyons which gash the plateau, to reach the top of it, and the engineers made very thorough examinations of various routes, and finally one was selected which it was thought was the best, and a calculation made as to what the 60 miles of railroad to reach the plateau would cost. That 60 miles had to get up in the air about 2000 feet. The estimate for building it was, in round figures, as I recollect it, $2,200,000, and the work was authorized and begun. When it came to construction we found, what we had not expected to find, that there was a very much greater proportion of rock than had been supposed in examination of the surface of the soil and of some of the outeroppings which gave the engineers the impression upon which they based their estimates that the rock was not very close to the surface; but, as a matter of fact, when we began to build that railroad the amount of rock work went so far beyond our expectations that it increased the cost very largely. In addition to that, during the construction of the road labor was hard to get, and the work did not go on as rapidly as we thought it would when we started in, and we were in two wet seasons during the construction of that road. That fact increased the cost very largely. So, as a result, that particular piece of railroad, instead of costing $2,200,000, is going to cost us something over $3,500,000. That variation is very large; and you might say that we could have made a better estimate if we had spent more time in investigation, but we didn't think it was necessary to bore holes in the ground everywhere to find out how near the rock was to the surface. We made the usual careful engineering examinations, and made a great many of them, and used as much care as is ordinarily used in investigating, surveying and projecting a new branch line. But there is a case where various causes beyond

the control of the promoters of the enterprise increased the cost more than 50 per cent. The piece of work that I mentioned in my little talk about the company in general, between Missoula and Garrison, which is an important throat through which all our east and west business passes, is another illustration of the difficulties that confront us. That road was a single track railroad with considerable curvature, about 75 miles long, and with some little humps in the grade. Being such an important part of a through main line the Company decided they would spend the money necessary in order to double track it, and when doing that it was deemed wise and was wise to reduce the curvature, take out those humps in the grade and make it what you would call a first-class modern piece of double-track railroad construction. Very careful estimates were made of all of that work. The line runs through the Hell Gate valley, which is not a productive piece of country, and it was not thought that the right of way would be very expensive, but we found the right of way cost far more than anyone could have imagined till they got into the work of buying it. The price of labor had also gone up very materially since the time when we projected the improvement, and it was so important the company went ahead with it. My recollection is that the estimated expense for revising the old line, taking out the curvature, and the grades and adding a new track the entire distance, was three and a half million dollars, or approximately $50,000 a mile. In the spring of 1908, as those of you who live out in this country know, there were some quite unusual floods in the Rocky Mountains. The Hell Gate valley is near the head waters of the Columbia drainage, and there were very heavy rains that came in May, and the snow melted at the same time, so the water came down the steep slopes of the Rocky Mountains much more rapidly than is usual. This work of ours was not entirely completed, and the rip rap was not in place, and the water rose to a higher level and was greater in volume than was ever before known in the state of Montana—a new record. Theretofore, no one, even after the most searching examination, ever had any idea that there could be that volume of water at any one time enter the Hell Gate valley. The result was that our grade line was found to be too low and was destroyed in a great many places. That flood cost the Company, all-told, in physical damage, about $800,000. That piece of work, therefore, had to be reconstructed, and the grade line changed somewhat, and the damage done by this flood repaired, so that the 70 miles of railroad, double-track railroad, in good condition, with proper

protection against the water, proper bridges and so forth, instead of costing, as we thought, $50,000 a mile will cost us a trifle over $70,000 a mile. Now, in that case, a great deal of time was used in examining the flood records, the course of the water, the lateral streams, and in calculating clearances for all of our bridges, so that there would be adequate water way; but in spite of all of the care that we used, we did not provide for this contingency that arose, and which had never arisen before, with the result that the cost of that particular piece of work will run a million and a half dollars more than we originally thought it would. That is another marked case on a work of large magnitude, where it seems almost impossible to figure exactly what the work will cost.

Q. Now, in each of those cases, as I understand it, the estimate originally submitted had an allowance of some amount for contingencies?

A. Oh, yes. All of our estimates we put in this arbitrary sum of 10 per cent. I think it is rather a percentage that has grown to be used without much thought of revising it. In the old days they used 10 per cent., and 10 per cent. very often is enough on a small piece of work, but of late years it hasn't seemed enough on these large works.

Q. That is, 10 per cent. of all of these items is customarily allowed?

A. Yes. The United States government imposed upon us an obligation to rebuild a bridge at Duluth—a very important harbor at Duluth—and we had one swing bridge in the channel, but the government told us we must have two—one on what is called the Wisconsin side of the River, and one on the Minnesota side of the river. It was quite a big bridge. There is a great deal of commerce, as you know, going through there. So we made an estimate for a modern, heavy, first-class bridge to be put in the very best shape we knew how. The estimate, in round figures, was $486,000. When we got to rebuilding some of the piers and foundations, and doing this, that and the other thing, we found difficulties that were unforeseen, and were delayed more or less by the passage of trains and boats, and that bridge, instead of costing $486,000—it is just being finished now—will cost about $690,000.

Q. Take the Lake Park to Glyndon line. How did the actual cost of construction there compare?

A. The Lake Park-Glyndon work is right here in Minnesota, and was for the purpose of getting a low grade line between the Mississippi River drainage on the east, and the Red River Valley drainage on the west, and the old company

had what is called one per cent. grade in there, and we deemed it advisable to reduce that grade 16 feet to the mile, going east, and 25 feet to the mile going west; and that country was surveyed very thoroughly for two or three years to see if we couldn't get a low grade line for those 27 miles. After developing those lines we developed a great distance on a number of ultimate routes, and we decided we would go out of the Red River valley to the east on a long grade. I think the fill is something like six miles long there, and we have over a million yards to the mile in that fill; and there was a very heavy cut also. We took the earth out of the heavy cut and put it on the prairie to make this fill. Everything went along very nicely until the work was approaching completion, when it turned out that the weight of this fill on the prairie began to force a settlement. We then began to make an investigation by a very careful series of borings, and we bored a great many holes all over that country, and found that there was an old deserted bed of the Buffalo River some 50 or 60 feet below the surface of the ground, which old bed of the Buffalo River was filled with a more or less soft clay, that seemed to compress under this unusual weight that was upon the top of the prairie, and there was a great sinkage there, in some places as much as 30 feet. The result of that was that the Company had to spend a very large amount of money in three ways: First, they had to trestle across this sink-hole, which was several thousand feet long; second, they have had to put in a great many more yards of dirt than ever was contemplated in the original estimate; third, it has had to put an apron of earth out over the prairie beyond the base of the fill, as a sort of a counter-balance. Now, the critic might say that the Company should have bored these holes beforehand; but it never occurred to anyone that this prairie, which seemed as firm and rigid as a pavement, would not support a fill even of that size; and we made our estimates of quantities very carefully, and the length of haul, and all that, and brought in the figures showing an estimated cost of that work of $2,200,000. Up to the present time, or March 31, 1909, the company has spent on those 26.83 miles of new railroad, new adjustment, $3,324,000, and there is still quite a bit of work to be done. I merely give that illustration to show that the estimate of 10 per cent. for these unusual and unforeseen contingencies is often entirely too low.

Cross-Examination by Mr. Teal.

Q. Mr. Elliott, just take up that question of contingencies. I don't think, from your answer to the question, that you, evidently understand how this statement was made up. Now, just to illustrate, I will take one from the Great Northern. There was an estimate made on the cost of a certain tunnel, which estimate was considerably in excess of its actual cost. The produced details of actual cost, which included the hospital expenses, expenses for the injured, and every possible expense account—Now, I understand the Northern Pacific's statement is made up the same way; that is, it is made up from the actual figures. For instance, the very illustration that you give of this Minnesota road which costs so much more was in the estimate with all of that cost and all of that extra expense. Now, do you think, under such circumstances as that, where figures are used that way, that 10 per cent. should be added, when every contingency is already covered?

A. Of course, I don't know the exact method adopted to make up that statement, but I am assuming that if a party of gentlemen got together and made an estimate of what they think it would cost them to reproduce the Northern Pacific road in its present condition, and used the very best expert talent that they could get, and they produced a figure of so many hundred million dollars for reproducing such a piece of property, and then added 10 per cent. for unexpected conditions—excessive right of way, or strikes or floods, or anything else of that kind, or interference by other railroads, I then think that 10 per cent. would not be too much to add.

Q. But where an estimate is made which has covered all these things, and not only covered all of these, but the estimate is far in excess of what the actual cost was, after adding those, you wouldn't still add another ten per cent., would you?

A. I say I don't know the estimate is made on that basis. I don't know anything about how it is arrived at.

Mr. Donnelly: You don't mean to say, Mr. Teal, that these figures in the first 32 items profess to represent actual cost of construction of any particular line?

Mr. Teal: No; I think that they represent an excessive cost, and more than that cost to the Northern Pacific, as demonstrated by what the witnesses themselves have testified to.

The Master: Take, for instance, the illustration with reference to quantity and character of a cut or a fill, that they found rock where they thought they would find loose dirt:

Now, as I understand it, in Mr. Darling's estimate, the exact situation has been taken in his estimate as to that matter?

Mr. Teal: Absolutely. Absolutely. There is no question as to that.

The Master: So far as those kinds of illustrations go, that wouldn't be, I shouldn't think, a perfect one.

Q. Now, Mr. Elliott, passing that. As I understand you, the Northern Pacific railroad is, in your judgment, the best located road through the section it operates in, has many and warm friends, and has a very large and productive business, is that correct?

A. Yes, sir.

Q. It also was the pioneer road through all of this country?

A. Yes, sir.

Q. Now, I would like to ask you just a few questions on one line, so that I will not be mistaken. Do you consider that your business in Minnesota, done by the Northern Pacific, pays?

A. I will have to answer your question first by asking you a question: You mean the business that the railroad transports on its railroad in Minnesota?

Q. Yes.

A. Yes, sir.

Q. And do you consider the local business pays?

A. No, sir.

Q. Now, we will take Dakota. Do you consider the business that the railroad transports on its road in Dakota pays?

A. Yes, sir.

Q. Do you consider the local business pays?

A. Yes; I think we have some margin of profit on the Dakota business.

Q. Now, as to Montana?

A. The same.

Q. And as to the state of Washington?

A. The same.

Q. Do you think the local business there pays?

A. Yes, sir.

Q. In Idaho it is the same, isn't it, too, although you haven't much mileage there?

A. We have very little local business in Idaho. I shouldn't be willing to say that we made anything out of the Idaho business.

Q. But in Washington, you have already answered?

A. Yes, sir.

Q. Taking the entire business of the road, as a whole, since

the reorganization, it has been of a continuous and steady growth, has it not?

A. Practically. We have had some ups and downs.

Q. Yes, I know, but substantially during that period?

A. Yes, sir.

Q. And the business, as a whole, is remunerative, is it not, Mr. Elliott?

A. The business as a whole has paid us more than it cost us to do it.

Q. Well, but let us get that a little more definite then. It has paid you sufficiently to pay dividends on your road during practically all that time, hasn't it?

A. We have paid some dividends all that time.

Q. You paid 7 per cent—I am not trying to catch you.

A. I understand.

Q. You paid 7 per cent. for four or five or six years, haven't you?

A. Paid it, I think, for at least five years.

Q. You paid interest on your bonds?

A. Yes, sir.

Q. Maintained your road?

A. Yes, sir.

Q. And have gone along in pretty good shape, haven't you, Mr. Elliott?

A. Fair shape.

Q. During the period from the reorganization down to date, taking that as a starting period, we will say 1897, as compared with to-day, your road-bed is in far better shape, isn't it?

A. Yes, sir.

Q. There are far heavier rails over the entire system, aren't there, taking it as a whole?

A. Taking it as a whole, the weight of our rail is heavy.

Q. The grades are very much less, taking the road as a whole?

A. On the main line?

Q. Yes, on the main line.

A. There isn't much improvement. There is no change on the branches.

Q. I mean, taking on your main line. Your cars are much larger than they were in 1898, larger capacity?

A. The average capacity of our box cars is bigger than it was in 1898. We still have a good many of the old cars.

Q. And the average traction power of the engines is much heavier?

A. Yes, sir.

Q. In other words, in every element that goes to make up operating, your ability to perform the same service to-day for less money than you could in 1898, is apparent throughout the system, isn't it?

A. Yes, sir.

Q. And for hauling—taking now a car as a unit—that is, the earning capacity of a car as a unit—it will average very much more now than it did five or six or seven or eight years ago, will it not?

A. I should doubt that.

Q. You don't think, then, that the loading capacity of the cars has increased on your system?

A. Yes, sir.

Q. Well then, they could carry a heavier load?

A. Yes, sir.

Q. And given the same rate of freight that existed eight years ago, that car would earn more money?

A. Yes, sir; under those conditions.

Q. There has been a constant increase of a train-load, has there not?

A. Pretty steady. We have improved it every year a little.

Q. And there has been a constant increase in the length of haul, has there not?

A. No, sir.

Q. You are sure of that?

A. Yes, sir.

Q. What is the average haul on your system?

A. In February it was 280 miles. I don't remember what it was last year. The length of haul has been decreasing a little in the last year.

Q. This question of the length of haul enters into the question of a road very materially, doesn't it, Mr. Elliott?

A. Yes, sir.

Q. That is, you take a short haul and put on a low rate for a few miles, the terminal charges might absorb the whole thing, mightn't they, and you wouldn't get even any return for hauling it?

A. You mean the earnings on the car?

Q. Yes, the earnings on that car?

A. You mean that the terminal charges would be so great that what you receive for transporting the car would not be

enough to pay the terminal charges and something for hauling, both?

Q. Yes, that is what I mean.

A. That might happen; yes, sir.

Q. But as the length of the haul increases, of course, the proportion of terminal charge to the haul decreases, does it not?

A. Yes, sir.

Q. Now, there is also another element which enters into the question of the percentage of cost of operating to receipts. For instance, when we speak of cost of operation we generally refer to the ratio of the cost of the receipts to the entire gross earnings, do we not—I mean the cost to the gross earnings?

A. If I understand your question, what we call the ratio of cost operation is the proportion that the total we have to pay out to maintain and operate your railway bears to the total you receive from transporting freight, passengers and maintenance.

Q. Now, a low percentage of operating cost can be reflected in high rates if the business is done, as well as reflected as the result of economical operation, can't it?

A. Well, I wouldn't want to testify as to the equality of them. Both elements would enter into the ratio. I wouldn't say that one was equal to the other.

Q. Now, the density of traffic on your line has increased very very materially in the last eight or ten years, has it not, per mile of road?

A. It is much more to-day than it was 8 or 10 years ago; yes, sir.

Q. And your freight earnings per mile of road have also increased very very much, have they not?

A. They increased up to a year or so ago. They have been showing decreases since then.

Q. Well, that was owing to the general condition of affairs; but I mean take this period over which we are speaking, commencing with the year 1897; take the 10 year period.

A. Yes, sir; our freight earnings per mile of road are very much more now than they were in 1897.

Q. I mean per mile of road.

A. Per mile of road; yes, sir.

Q. Now, in the question of rate making I suppose the following factors enter into a rate a given article should pay:

its volume—its bulk and weight has a good deal to do with it, has it not, Mr. Elliott?

A. Yes, sir.

Q. And its value?

A. Yes, sir.

Q. And the risk?

A. That is correct.

Q. And the facilities required?

A. Yes, sir.

Q. The rapidity of movement?

A. Yes, sir.

Q. And the length of haul?

A. Yes, sir.

Q. And the terminal cost?

A. Yes, sir.

Q. Those are all elements, are they not?

A. Yes, sir.

Q. Now then, you take any article or commodity in which the shipper loads it and the consignee unloads it, so that it doesn't have to pass through terminals, nor pass through the warehouse, or anything of that kind. To that extent those facts are entitled to consideration in making a rate, are they not?

A. Yes, sir.

Q. What commodity on your road, that you carry, will come nearer reaching the substantial capacity of a car than lumber?

A. Coal.

Q. What else?

A. Ore.

Q. What else?

A. Grain.

Q. What else?

A. Well, various iron articles, stone, sand.

Q. That is substantially all, isn't it?

A. Logs, of course.

Q. Well, I know; but that is a raw product that I don't think you make much money out of hauling.

A. I agree with you.

Q. Well, it is a raw product that you haul to the mill. But a lumber car, or rather, lumber loading, is quite up to the capacity, is it not?

A. No, sir.

Q. It is not?

A. No, sir.

Q. Would you say that loading carloads of lumber, that that is not a heavy loading article?

A. No, sir.

Q. It is not?

A. Excuse me. I don't think you got my answer right. You asked me if I would say it was a heavy loading article, and I answered "No, sir." We consider it a heavy loader, but it is not loaded to the capacity of the car, except in rare instances. Very rarely you get 80,000 pounds of lumber in an 80,000 pound car.

Q. Would you say it costs any more to handle lumber than it does coal, wheat, and articles like that?

A. Well, under exactly the same conditions I would say that it would.

Q. There are substantially no terminal charges on handling lumber, are there?

A. Yes, sir.

Q. What are they?

A. Well, we have to gather up lumber at a good many outlying points, north of Seattle, to pay expenses of doing the lumber business, or a very considerable. We do kind of a switching business there, picking up a car of lumber here and a car there, and have to bring it into Seattle, classify it, sort it out. The same thing is true on the Gray's Harbor and South Bend branches.

Q. Generally speaking, those cars are loaded at the mills, are they?

A. Yes, sir.

Q. And when they are brought to their destination, generally speaking, they are unloaded in the lumber yards, are they not?

A. Lumber yards, or at some manufacturing establishment.

Q. Yes, that is what I mean. They are certainly not passed through the sheds and passed through and unloaded as you handle less than carload freight, are they?

A. No, sir; but we have got unloaded right out here at Minnesota Transfer, at our own expense, I believe—I am not certain as to that—a very large amount of shingles, piled on very valuable ground.

Q. Yes, I noticed that the other day. But is that the way lumber is usually handled over your road?

A. No, but it is an incident to the business. We are using up some very valuable ground there for the benefit of the lumber.

Q. What would that ground be used for if those shingles weren't there?

A. I don't know.

Q. I didn't think so, Mr. Elliott.

A. Well, it is valuable ground, just the same. If we didn't own it, the lumbermen would have to go and provide it.

Q. Do you think that is a serious consideration, just at the present time, that those shingles are out there on that ground?

A. No. A consideration.

Q. Now, in view of the fact that there have been a good many figures gone into as to the cost of reproduction, I would like to get your ideas, because there must be some reason for all this. To what extent do you think the cost of reproduction enters into rate making?

A. I don't think it has anything to do with it at all.

Q. To what extent do you think the cost of construction has to do with rate making?

A. Very little.

Q. To what extent do you think the capitalization has anything to do with rate making?

A. Nothing at all.

Q. You and I quite agree. In other words, if it came to a question of reproduction, like on the New York Central, Lake Shore, and Michigan Central, it would be almost impossible, wouldn't it, to sit down and make out a reproduction cost on such roads as those? Wouldn't it, really, to put it mildly, appall one?

A. Let me hear that question?

Q. I say the reproduction cost would probably appall one, if it could be reproduced at all?

A. Oh, I think so; yes, sir.

Q. Another thing I would like to get your idea about: You know the Des Schutes Road, the building of which is now being spoken of, from the Columbia River into Central Oregon, under present conditions will have to run up through the canyon, will it not?

A. I don't know that country, Mr. Teal.

Q. You don't know the Des Schutes Canyon?

A. No, sir.

Q. Well, let us assume that it would. Now, application

has been made to the government for right of way, as it runs nearly all over government land. There is room in that canyon for but two roads at the outside. This right of way, if granted, will cost them nothing. Now, in the revaluation and reproduction of that road for rate making purposes, to what extent should that condition, or the value of that right of way be considered?

A. I think they ought to consider the fair value of it as a right of way.

Q. As a right of way?

A. Yes, sir.

Q. Regardless of how they acquire it?

A. Yes, sir.

Q. Regardless of the fact that the public donated it?

A. Yes, sir.

Q. And of course you feel the same way about all of the right of way of the Northern Pacific that was donated?

A. Yes, sir.

Q. About the terminals in Spokane that you spoke of?

A. Yes, sir.

Q. And you think that no consideration should be given to the fact that that right of way was a gift from the public?

A. I think no consideration should be given to that fact, because it was given by the public for a consideration, namely, to induce someone to take the risks of going into business.

Q. Taking this proposed method of reproducing the Northern Pacific railroad: You are familiar with the method used, I presume, are you, Mr. Elliott?

A. In a general way; yes, sir.

Q. I will ask you now, if you ever knew of a railroad planned or built in that way, in your experience as a railroad man?

A. No, sir; railroads have grown like Topsy. They begin to make little pieces at a time.

Q. That is the way railroads grow. I want to ask you this: The latter part of last year, or during 1908, or 1909, did the coal company in which the Northern Pacific Company is interested, pay a dividend amounting to about $17,000,000?

A. Not the coal company; no, sir.

Q. What company did?

A. The Northwestern Improvement Company.

Q. When was that paid?

A. That was paid, I think, in November, 1908. I can give you the exact date, if you want it.

Q. I do, and the exact amount, please.

A. The dividend was $17,453,000, payable on December 3, 1908.

Q. And it was paid, was it not?

A. Yes, sir.

Q. And the Northern Pacific Railway Company, do they own all of the stock of that concern?

A. Yes, sir.

Q. Now, Mr. Elliott, I notice amongst the treasury securities here, $2,775,000 of Northwestern Improvement Company stock, valued at $2,775,000 as of June 30, 1908. Is that the stock that you refer to?

A. Yes, sir.

Q. As a matter of fact, at that time that stock was worth about $17,000,000 more than shows on your balance sheet, wasn't it?

A. Well, the Northwestern Improvement Company had assets in its box sufficient to pay $17,000,000 and whatever it was I said. You can put a value on the stock of anything you want to.

Q. As far as the public is concerned, or as far as your stockholders were concerned, could they have taken your so-called balance sheet and ascertained the value of that stock?

A. No, sir; I don't suppose it could. I don't know if they could have made the value of the stock even if they had all the other information.

Q. Even if they knew $17,000,000 was on hand?

A. They could form their own conclusions about the value; but there was no sale of the stock, there was no market for it.

Q. No, I understand that. Now, did that pay out all of the surplus of that company at that time, or is there still surplus?

A. That paid out practically all at that time.

Q. Where in that report is the ownership of it—Oh, I guess it is here—"Cost of securities in the hands of the trustee of the Burlington and the capital assets"—

A. I don't know what your question is.

Q. Does the item "Cost of securities in hands of Trustee, etc, 1,076,130 shares, C. B. & Q. R. R. Capital stock," represent your interest, or the interest of the Northern Pacific Railway Company, in the Burlington?

A. Yes, sir.

Q. If I understand correctly, the interest in the Burlington was acquired by the issue of joint bonds of the Great Northern and Northern Pacific Railway Company, was it not?

A. Yes, sir.

Q. And they, of course, guaranteed the interest on those bonds?

A. They either have to pay the interest, or they would lose the stock. The stock was put up as collateral for those bonds.

Q. And the Burlington, primarily of course, is responsible for that interest?

A. No, sir; the people who issued the bonds are responsible.

Q. That is true; but the Burlington is paying the interest in the shape of dividends on the stock?

A. The Burlington is paying to the stockholders a dividend on its stock.

Q. Now, does it pay any more in dividends than enough to pay the interest on the stock?

A. The Burlington is now paying an eight per cent. dividend on its stock, to the stockholders, chiefly the Great Northern and the Northern Pacific, and that eight per cent. dividend is approximately the same sum as is paid on these joint fours, as they call it. There are a few outstanding stockholders who get their eight per cent. dividend direct, as stockholders.

Q. In other words, the stock cost the Northern Pacific and Great Northern about two for one on the par value, did it not?

A. Yes, sir.

Q. Now, as a matter of fact, the earnings of the Burlington are very largely in excess of this 8 per cent. beyond par, are they not?

A. Well, they are in excess, or have been. I haven't looked at them for the last few months.

Q. But in this statement as to the earnings of the Northern Pacific, which is filed here, from all of its securities, no account whatever is taken of this equity in the earnings of the Burlington, in any way?

A. No, sir.

Q. So that it is quite immaterial whether that is a number of million dollars or not, it does not appear here in any way?

A. It does not appear in our balance sheet; no, sir.

Q. And that joint ownership in the Burlington is, accord-

ing to your reports, a very valuable asset of the Northern Pacific, as a business producer, isn't it?

A. We think so. It enlarges the market for our products and so forth, just as I tried to point out.

Q. Now, recently, or within the last year, the Burlington authorized an issue of mortgage bonds, amounting to about $300,000,000, didn't it?

A. They made a new mortgage, which, my recollection is, provided for an ultimate issue of $300,000,000.

Q. Do you know how many of bonds were issued under that?

A. No, sir.

Q. Do you know whether any have been issued?

A. Not of my own knowledge; no, sir.

Q. You are President of the Northern Pacific and own half of the stock of it, don't you?

A. Yes, sir; but I don't charge myself with the duty of watching all the financial operations of the C. B. & Q., because we have a number of directors on the Northern Pacific board and also on the Burlington board and they watch that.

Q. You don't know whether or not the Burlington has issued $18,000,000 in those bonds?

A. My impression is they have issued 15 to 18 million.

Q. Do you know whether that $18,000,000 was issued to take up accounts that had been charged to operating expenses of the Burlington?

A. I do not; no, sir.

Q. In other words, you don't know whether that was on a line with what has been termed the Alton deal or not?

A. Well, I don't know, but I am very positive it was not.

Q. In other words, that there is no capitalization of expense accounts?

A. I think not. I know a great deal about the very careful, honest, financial methods of the C. B. & Q., and they have been such from the start.

Q. Now, the Burlington also has large amounts of reserve funds and sinking funds, has it not?

A. I think it has; yes, sir.

Q. For its bonded debt?

A. Yes, sir; its annual report sets them all forth in a great deal of detail.

Q. Now, you spoke about this Spokane, Portland & Seattle, from Portland to Pasco, and was asked about whether that was paying or not. Now, that road was built, not only for local business, but also for the purpose of taking care

of through business on a more economical basis in carrying it over the mountains. Isn't that correct?

A. That was one of the purposes; yes, sir.

Q. And the road is just substantially getting in shape—well, it isn't even in shape yet—where it can handle traffic as it will handle it when completed, to Spokane?

A. We hope to begin freight operations there the 15th of May.

Q. Now, on the Grangeville line that you spoke of: That runs through very rich country, does it not?

A. Yes, sir; that is a fine wheat plateau there. They have about 49 inches of rainfall up there.

Q. And when that road is completed, and in operation, there is no reason why that should not be a very profitable piece of road, is there?

A. It all depends on what rates the Company can get for handling the products. There ought to be a large number of bushels of wheat produced and marketed from that section.

Q. And in-bound freight also?

A. Considerable in-bound; yes, sir.

Q. In connection with the building up of the Northern Pacific during the last 8 or 9 years, there have been very large amounts charged to maintenance of way and structures, and maintenance of equipment, which have gone into the operating expense account?

A. Yes, sir.

Q. And that, of course, then, appears as an operating expense of the road?

A. Yes, sir.

Q. And in addition to that there has been quite a number of funds created, has there not?

A. Yes, sir.

Q. And a reasonable surplus, or unreasonable, as people look at it?

A. Well, I should think I would say yes to that question.

Q. Have you any idea, after taking out all of the charges which are proper to take out from your income account for 1906 and 1907, what the earnings were on the stock of the Northern Pacific?

A. Not without going to the reports and making the calculation.

Q. Would you say they were more or less than 14 per cent. of the stock?

A. My estimate, without looking at the report, would be that it was about 14 per cent. for those two years, but I wouldn't want to say that absolutely without examining the figures in detail.

Re-direct Examination by Mr. Donnelly.

Q. Referring to the improvement of the railroad, Mr. Elliott, in the matter of the elimination of curves and improvement of grades, and the increased capacity of the equipment, I will ask you to state whether that improvement has been brought about without a very great capital expenditure?

A. No, sir; we have spent a very large amount of money for permanent additions, betterments and improvements of the existing railroad.

Q. Could you give approximately what amount that has been since the reorganization?

A. I could not, without going to the records. I can state that since I was president of the Company, that is five years, we have spent for new equipment, permanent additions and improvements, branch lines, acquisition of new property, in the neighborhood of $100,000,000; but I don't remember how much prior to that time.

Q. Then, in the matter of this carload traffic, Mr. Teal has called your attention to the fact that lumber is generally loaded by the shipper and unloaded by the consignee. Isn't that generally true of the traffic that is moved in carloads?

A. Very largely so.

Q. So that it is not special to the movement of lumber at all?

A. No, sir.

Q. You stated in answer to Mr. Teal's question that the value of the property, as such, had nothing to do with the making of a rate, but in determining whether the earnings and the operation give a fair return upon the value of the property, isn't it important to know something of that value?

A. Very. We wouldn't go into the business unless we were going to make money. But because the property was of a given value, we could not charge a higher rate than commercial conditions would justify.

Q. And an inventory of the value of the various items which go to make up a railroad property, then, is of importance in determining whether the road, as a whole, is earning a fair return?

A. Yes, sir.

Q. Now, considering your knowledge and the value of the system as it stands to-day, and its net earnings from operation, are you able to say whether the property at the present time is earning a fair return upon its value?

A. I don't think it is earning a fair return on its present fair value as a great business enterprise.

Q. Nor that it has during the last three or your years?

A. No, sir.

Mr. Walter: Well, ask him how long.

Q. Well, at any time since the reorganization.

A. Not since the receivership.

By Mr. Teal:

Q. You say that since you have been president you put in, in round numbers, $100,000,000 in extensions, improvements, and double tracking?

A. Equipment; yes, sir. Approximately that. That is my recollection. If you want the exact figure I would have to look up the statistics.

Q. I mean approximately.

A. Yes.

Q. That was new capital?

A. Yes.

Q. Now, at the same time there had been going in, from 1897, and are yet, many millions into the maintenance of way and structures, that went into the operation expense account also?

A. Yes, sir; we have tried to be what is called liberal with our maintenance of way, to keep the road in good order, and to keep our equipment in good order.

Q. And the result of that, of course, is reflected in the cost of operation, is it not?

A. Yes. If we have a good track and good cars we will, operate more economically than if we have poor track and poor cars.

Q. And those items that go into the operating expense account that way, are deducted, of course, from the revenue, in order to arrive at the net?

A. Yes, sir.

Q. And do you think that on the capital of this company, as invested, and as represented by its capital stock, it is not earning to-day a fair return?

A. On the capital alone we have earned a reasonably fair return in the last year or two. The question asked me by Mr. Donnelly was on what I considered the fair value of the property. Our property is under-capitalized.

Q. And then if the property, through the development of the business along the line, the settlement of the country, the increase of production, increases in value through an increase of income, then you think that you are entitled to a still higher return as that value increases?

A. Yes, sir.

Q. And then a constantly increasing business and a constantly increasing profit would furnish a constantly increasing reason for increasing rates, from your standpoint?

A. I didn't say that.

Q. Well, if it did not produce the return without raising rates, then you would believe it to be right, wouldn't you, so you could get your return?

A. I didn't say that at all. I think rates are not made based necessarily on valuation.

Q. Well, but you say the returns bear some relation to that.

A. I said this: that no one would go into the business of railroading unless he thought he was going to make a profit. But if one railroad is worth $1,000,000 and another railroad is worth $500,000, the $500,000 one makes a lower rate than the million dollar one. $1,000,000 one cannot get a higher rate. It can only get what commercial conditions will permit. You are asking me two kinds of questions, as I understand it.

Q. I will try to limit myself to one. Your objection is, as I understand it, that the basis of value of a road would probably be on what it could be capitalized at and its income; is that correct?

A. No, sir; I think the basis of value of the railroad is what is its fair value to reproduce it in its present condition.

Q. Then, its income would have nothing to do with it?

A. Not necessarily.

Q. So that whether its income was greater or less, or whether it was a paying road, or a road in the hands of a receiver, would make absolutely no difference in your opinion, as to the value of that road, whether it could be reproduced or not?

A. I don't think I followed that. Can you state it again?

Q. Well, you can take two roads, both costing the same money, one is in the hands of a receiver and the other is making money. What creates the value in those instances?

A. I don't know. One may be badly managed or badly located.

Q. Well, assume that it is badly located.

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A. Then it will fail, just as a badly located hotel would fail.

Q. Then the value of a railroad really depends not only upon the absolute cost of its construction, but on what it is able to earn, doesn't it?

A. Depends not only on that, but on the integrity of its management, and on its general history and ability to do business. Just like any other commercial enterprise, to my mind. You can have one good hotel on one corner of the street and another good hotel on the other corner. One of them will do a lot of business and the other won't. As pieces of brick and mortar they may be worth just exactly the same.

Q. Taking up that one feature of the railroad question: Do you look upon railroad property, and the handling of a railroad property, and its government and control, the same as an individual would look upon a hotel that he owned?

A. I do.

Q. In other words, you feel that that is just simply a private enterprise, in which the public have no interest and the government should exercise no control?

A. No, sir; I think the government has a perfect right to exercise a control. But it is a private enterprise, established for the purpose of making money, just as the hotel is established for the purpose of making money.

Q. To what extent do you think the control should be exercised?

A. I think they should avoid unjust discrimination.

Mr. Walter: And not the reasonableness of the rates?

The Witness: I think that should be taken care of by the ordinary competitive forces of business.

By Mr. Teal:

Q. Is there any such thing as competition in rate making to-day?

A. Yes, sir; every pound of freight, nearly, on the Northern Pacific is competitive to-day.

Q. And rates are made upon that basis?

A. Yes, sir.

Mr. Holden: We have completed the oral testimony, as at present advised, in our direct case. We propose, before resting, to offer portions, or in may be all, of the record taken before the Commission. I am not prepared at this time to make that offer, largely because of Mr. Dillard's necessary absence, and the fact that I do not represent his clients and do not desire to take a step of that kind, without a full consultation with him; and my suggestion is that at the next

sitting we will be prepared to close our case in chief in a very few minutes, and, with that understanding, I would suggest such adjournment as counsel for the other side may desire in order that they may be ready to proceed with their side of the case when we make the formal rest in our case in chief.

Mr. Donnelly: Mr. Teal, can you give us some information as to when and where you want to meet again?

Mr. Teal: We want to make this, as far as we are concerned, as brief as we can. Just as soon as I get this testimony, which is being sent on, I shall go over it, and then select the witnesses I want, and there will be very few. Mr. Watler will go at once to Washington, and submit the matter, of course, to the Interstate Commerce Commission, or the defendants, and they will have to determine to what extent they want to check up the question of valuations which have been submitted, and then Mr. Walter will advise us. As soon as we know that, we can determine.

Mr. Walter: My impression is we shall want to go very much into detail in this matter.

Mr. Holden: Can you give us any information about when you want to begin?

Mr. Walter: Well, if we do that, the men will go to work at once, and we can then let you know as soon as we determine that.

Mr. Teal: We can arrange for two weeks notice—will that be long enough?—before we commence to take testimony?

Mr. Holden: It will be. I would like to have a week or ten days.

The Master: Then, as I understand it, you gentlemen will agree on a time and place for the next hearing and let me know as long ahead as possible.

Adjourned subject to notice.

326 Federal Building, St. Paul, Minn., November 22, 1909.

The hearing was resumed before the special master, Frederick M. Dickson, at the above time and place.

Present: On behalf of the complainants, Mr. Hale Holden, Mr. Charles Donnelly, Mr. F. C. Dillard.

On behalf of the defendant, Mr. Luther M. Walter, Mr. W. A. Wimbish, Mr. J. M. Teal.

Mr. Holden: I am not sure whether I offered in evidence during the last hearing a statement of the earnings, operating

expenses and net income of the Great Northern line for the last five years.

The Master: I don't think you did.

Mr. Holden: I had a compilation made from the reports to the Interstate Commerce Commission, and the statement is for the years 1904 to 1908, inclusive. It is in seven sheets. I offer it in evidence, and ask that it be marked "Great Northern Exhibit A."

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COMPLAINANT'S EXHIBIT "A" (G. N.).

GREAT NORTHERN RAILWAY LINE.

STATEMENT OF INCOME FROM OPERATION OF THE GREAT NORTHERN RAILWAY COMPANY AND PROPRIETARY COMPANIES, DURING THE FISCAL YEARS ENDED JUNE 30, 1904 TO 1908, INCLUSIVE.

GROSS EARNINGS FROM OPERATION.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$36,307,026.33	$39,577,726.70	$46,494,226.57	$50,208,035.10	$54,978,162.47
Willmar & Sioux Falls Ry.	1,489,707.28	1,646,370.91	2,020,978.72	2,038,193.28	.....
Duluth, Watertown & Pacific Ry.	131,322.35	108,170.68	158,862.86	177,426.06	.....
Montana Central Ry.	2,381,658.68	2,423,914.56	2,846,138.59	2,889,405.03	.....
Spokane Falls & Northern Ry.	649,986.26	716,183.76	811,819.66	931,353.44	.....
Washington & Great Northern Ry.	87,047.54	132,968.76	214,414.97	350,219.22	.....
Columbia & Red Mountain Ry.	52,446.30	36,706.74	23,453.59	25,573.21	.....
Minneapolis Union Ry.	298,417.89	307,951.25	290,664.09	294,794.35	.....
Duluth Terminal Ry.	34,412.61	32,172.95	37,591.17	45,876.09	.....
Kootenai Valley Ry.	7,894.79	6,883.36	23,203.48	22,096.10	11,132.88
Iowa & Great Northern Ry.	.....	.....	.....	.....	310,994.25
Minneapolis Western Ry.	.....	.....	.....	.....	49,099.72
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	58,119.48	57,881.84	59,882.05	49,597.65	.....
Union Terminal Ry.	.....	.....	23,995.01	86,988.67	.....
Bedlington & Nelson Ry.	537.02	1,162.05	4,366.21	1,991.48	807.11
Kaslo & Slocan Ry.	24,683.50	28,765.97	20,095.87	15,534.51	17,628.63
Nelson & Fort Sheppard Ry.	92,816.35	100,716.75	87,471.82	81,056.10	.....
Red Mountain Ry.	61,221.87	41,980.16	36,679.80	37,545.93	.....
V. V. & E. Ry. & Nav. Co.	27,434.62	89,952.22	238,519.44	264,274.22	.....
	$41,704,732.87	$45,309,508.66	$53,392,363.90	$57,519,960.44	$55,367,825.06

OPERATING EXPENSES.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$18,099,509.51	$19,154,402.66	$23,133,081.11	$29,446,866.30	$36,442,480.04
Willmar & Sioux Falls Ry.	1,091,781.71	1,014,220.99	1,157,282.82	1,363,633.78	.....
Duluth, Watertown & Pacific Ry.	74,448.11	52,857.02	79,071.70	108,669.94	.....
Montana Central Ry.	1,332,223.25	1,224,046.34	1,487,087.31	1,490,655.43	.....
Spokane Falls & Northern Ry.	410,754.74	388,021.72	447,935.26	551,904.72	.....
Washington & Great Northern Ry.	61,415.19	66,944.73	100,022.39	152,712.08	.....
Columbia & Red Mountain Ry.	44,760.26	30,713.04	26,024.49	26,876.78	.....
Minneapolis Union Ry.	97,086.51	106,636.96	82,286.08	86,890.01	.....
Duluth Terminal Ry.	15,073.64	13,661.43	18,985.78	28,447.34	3,466.52
Kootenai Valley Ry.	17,067.27	13,120.19	13,894.78	27,247.09	34,134.63
Iowa & Great Northern Ry.	.....	.....	.....	.....	239,112.97
Minneapolis Western Ry.	.....	.....	.....	.....	37,495.06
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	37,688.20	35,510.74	38,971.65	37,391.69	.....
Union Terminal Ry.	.....	.....	3,127.28	15,078.95	.....
Bedlington & Nelson Ry.	9,358.29	7,663.79	7,893.33	14,787.39	14,968.75
Kaslo & Slocan Ry.	41,751.73	56,890.91	34,821.10	37,398.14	50,196.15
Nelson & Fort Sheppard Ry.	97,011.41	95,984.27	99,829.65	127,920.10	.....
Red Mountain Ry.	50,096.98	42,115.81	37,856.77	35,194.38	.....
V. V. & E. Ry. & Nav. Co.	14,430.76	65,557.44	136,044.61	183,881.54	.....
	$21,494,457.56	$22,368,348.04	$26,904,219.11	$33,735,555.66	$36,821,854.12

TAXES.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$1,283,878.19	$1,384,988.26	$1,605,801.09	$1,882,699.31	$2,276,074.18
Willmar & Sioux Falls Ry.	75,222.44	71,129.41	102,367.43	97,705.26	.....
Duluth, Watertown & Pacific Ry.	6,841.60	6,600.22	8,776.41	8,482.30	.....
Montana Central Ry.	52,451.44	54,204.73	54,651.42	62,036.28	.....
Spokane Falls & Northern Ry.	32,190.43	27,601.92	29,042.43	36,185.24	.....
Washington & Great Northern Ry.	9,618.19	9,356.88	10,654.42	15,206.75	.....
Columbia & Red Mountain Ry.	1,095.24	1,621.88	1,621.88	2,014.20	.....
Minneapolis Union Ry.	1,095.90	1,126.13	1,183.44	1,037.21	.....
Duluth Terminal Ry.	.....	.....	.....	.....	.....
Kootenai Valley Ry.	4,991.96	7,402.86	4,541.94	4,074.98	5,783.45
Iowa & Great Northern Ry.	.....	.....	.....	.....	10,053.44
Minneapolis Western Ry.	.....	.....	.....	.....	2,051.62
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	1,741.20	1,738.83	2,666.39	1,983.91	.....
Union Terminal Ry.	.....	.....	3,012.00	12,579.16	9,447.56
Bedlington & Nelson Ry.	857.50	1,411.56	1,404.72	1,391.04	484.76
Kaslo & Slocan Ry.	1,412.08	3,284.71	2,749.80	3,448.00	3,448.80
Nelson & Fort Sheppard Ry.	3,024.60	4,904.40	4,904.40	5,691.78	.....
Red Mountain Ry.	618.39	982.00	982.00	1,387.28	.....
V. V. & E. Ry. & Nav. Co.	302.40	302.40	302.40	6,277.67	.....
	$1,475,341.56	$1,576,656.19	$1,834,662.17	$2,142,200.37	$2,307,343.81

OPERATING EXPENSES AND TAXES.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$19,383,387.70	$20,539,390.92	$24,738,882.20	$31,329,565.61	$38,718,554.22
Willmar & Sioux Falls Ry.	1,167,004.15	1,085,350.40	1,259,650.25	1,461,339.04	.....
Duluth, Watertown & Pacific Ry.	81,289.71	59,457.24	87,848.11	117,152.24	.....
Montana Central Ry.	1,384,674.69	1,278,251.07	1,541,738.73	1,552,691.71	.....
Spokane Falls & Northern Ry.	442,945.17	415,623.64	476,977.69	588,089.96	.....
Washington & Great Northern Ry.	71,033.38	76,301.61	110,676.81	167,918.83	.....
Columbia & Red Mountain Ry.	45,855.50	32,334.92	27,646.37	28,890.98	.....
Minneapolis Union Ry.	98,182.41	107,763.09	83,469.52	87,927.22	.....
Duluth Terminal Ry.	15,073.64	13,661.43	18,985.78	28,447.34	3,466.52
Kootenai Valley Ry.	22,059.23	20,523.05	18,436.72	31,322.07	39,918.08
Iowa & Great Northern Ry.	.....	.....	.....	.....	249,166.41
Minneapolis Western Ry.	.....	.....	.....	.....	39,546.68
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	39,429.40	37,249.57	41,638.04	39,375.60	.....
Union Terminal Ry.	.....	.....	6,139.28	27,658.11	9,447.56
Bedlington & Nelson Ry.	10,215.79	9,075.35	9,298.05	16,178.43	15,453.51
Kaslo & Slocan Ry.	43,163.81	60,175.62	37,573.90	40,846.14	53,644.95
Nelson & Fort Sheppard Ry.	100,036.01	100,888.67	104,734.05	133,611.88	.....
Red Mountain Ry.	50,715.37	43,097.81	38,838.77	36,581.66	.....
V. V. & E. Ry. & Nav. Co.	14,733.16	65,859.84	136,347.01	190,159.21	.....
	$22,969,799.12	$23,945,004.23	$28,738,881.28	$35,877,756.03	$39,129,197.93

NET EARNINGS.

	1904	1905	1906	1907	1908
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$16,923,638.63	$19,038,335.78	$21,755,344.37	$18,878,469.49	$16,259,608.25
Willmar & Sioux Falls Ry.	322,703.13	561,020.51	761,328.47	576,854.24	.....
Duluth, Watertown & Pacific Ry.	50,032.64	48,713.44	71,014.75	60,273.82	.....
Montana Central Ry.	996,983.99	1,145,663.49	1,304,399.86	1,336,713.32	.....
Spokane Falls & Northern Ry.	207,041.09	300,560.12	334,841.97	343,263.48	.....
Washington & Great Northern Ry.	16,014.16	56,667.15	103,738.16	182,300.39	.....
Columbia & Red Mountain Ry.	6,590.80	4,371.82	*4,192.78*	*3,317.77*	.....
Minneapolis Union Ry.	200,235.48	200,188.16	207,194.57	206,867.13	.....
Duluth Terminal Ry.	19,338.97	18,511.52	18,605.39	17,428.75	*3,466.52*
Kootenai Valley Ry.	*14,164.44*	*13,639.69*	4,766.76	*9,225.97*	*28,785.20*
Iowa & Great Northern Ry.	.....	.....	.....	.....	.....
Minneapolis Western Ry.	.....	.....	.....	.....	9,553.04
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	18,690.08	20,632.27	18,244.01	10,222.05	.....
Union Terminal Ry.	.....	.....	17,855.73	59,330.56	*9,447.56*
Bedlington & Nelson Ry.	*9,678.77*	*7,913.30*	*4,931.84*	*14,186.95*	*14,646.40*
Kaslo & Slocan Ry.	*18,480.31*	*31,409.65*	*17,478.03*	*25,311.63*	*36,016.32*
Nelson & Fort Sheppard Ry.	*7,219.66*	*171.92*	*17,262.23*	*52,555.78*	.....
Red Mountain Ry.	10,506.50	*1,117.65*	*2,158.97*	964.27	.....
V. V. & E. Ry. & Nav. Co.	12,701.46	24,092.38	102,172.43	74,115.01	61,827.84
	$18,734,933.75	$21,364,504.43	$24,653,482.62	$21,642,204.41	$16,238,627.13

OTHER INCOME.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
GREAT NORTHERN RY.					
Rent of Leased Lines	$119,750.74	$119,851.55	$123,823.52	$139,501.61	$ 30,112.15
Rent of Equipment	122,747.30	219,734.18	282,208.98	444,694.99	384,116.72
Miscellaneous Rents					189,523.70
Joint Facilities					294,982.88
Miscellaneous	11,313.00	145,602.53	54,216.20	24,354.76	
Total G. N. Ry.	$253,811.04	$485,188.26	$460,248.70	$608,551.36	$898,735.45
WILLMAR & SIOUX FALLS RY.					
Rent of Equipment	$ 1,968.87	$ 2,318.50	$ 4,855.50	$ 6,560.53	
Rent of Leased Lines				488.71	
Total W. & S. F. Ry.	$ 1,968.87	$ 2,318.50	$ 4,855.50	$ 7,049.24	
MONTANA CENTRAL RY.					
Rent of Equipment	$ 20,039.74	$ 29,172.35	$ 21,514.86	$ 41,157.13	
MINNEAPOLIS UNION RY.					
Material Premium Account	$ 63.63	$ 108.54	$ 357.71	$ 202.98	
DULUTH TERMINAL RY.					
Rent of Property					$ 30,699.67
Companies not Reporting to Interstate Commerce Commission:					
MINNEAPOLIS WESTERN RY.					
Miscellaneous	$ 8.06	$ 1.00	$ 80.56		
UNION TERMINAL RY.					
Rent of Property					$ 77,365.13
KASLO & SLOCAN RY.					
Miscellaneous Rents				$ 3,502.02	$ 60.81
NELSON & FORT SHEPPARD RY.					
Rent Equipment, Buildings, etc.	$ 67.91	$ 90.67	$ 82.88	$ 339.00	
RED MOUNTAIN RY.					
Rent Equipment, Buildings, etc.	$ 144.87	$ 142.45	$ 156.00	$ 649.79	
V. V. & E. RY. & NAV. CO.					
Rent Equipment, Buildings, etc.	$ 206.63	$ 317.52	$ 5,130.05	$ 66,583.52	
	$276,310.75	$517,339.29	$492,426.26	$728,035.04	$1,006,861.06

DEDUCTIONS FROM INCOME.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
GREAT NORTHERN RY.					
Rents Paid for Lease of Road:					
Duluth, Superior & Wn. Term. Co.	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00	$ 20,000.00
Province of British Columbia, Frazer River Bridge	.....	9,303.18	15,000.00	15,000.00	.....
Joint Facilities	.....	.....	.....	.....	150,588.37
Miscellaneous Rents	.....	.....	.....	.....	3,509.39
Depreciation of Equipment	.....	.....	2,344,618.59	2,934,976.22	.....
Total G. N. Ry.	$ 20,000.00	$ 29,303.18	$2,379,618.59	$2,969,976.22	$174,097.76
WILLMAR & SIOUX FALLS RY.					
Depreciation of Equipment	.....	.....	$ 39,845.13	$ 37,116.38	.....
MONTANA CENTRAL RY.					
Depreciation of Equipment	.....	.....	$123,145.88	$110,881.69	.....
DULUTH TERMINAL RY.					
Fund for Renewal of Elevated Structure	.....	.....	.....	.....	$ 10,380.84
IOWA & GREAT NORTHERN RY.					
Rentals Paid	.....	.....	.....	.....	$ 28,657.49
MINNEAPOLIS WESTERN RY.					
Rentals Paid	.....	.....	.....	.....	$ 2,628.18
Companies not Reporting to Interstate Commerce Commission:					
MINNEAPOLIS WESTERN RY.					
Rentals Paid	$ 1,549.99	$ 2,077.09	$ 1,851.19	$ 1,851.08	.....
Depreciation of Equipment	.....	.....	862.22	862.22	.....
Total M. W. Ry.	$ 1,549.99	$ 2,077.09	$ 2,713.41	$ 2,713.30	.....
BEDLINGTON & NELSON RY.					
Rentals Paid	.....	.....	.....	.....	$ 4,038.00
Total	$ 21,549.99	$ 31,380.27	$2,545,323.01	$3,120,687.59	$219,802.27

NET INCOME FROM OPERATION.

	1904.	1905.	1906.	1907.	1908.
Per Reports to Interstate Commerce Commission:					
Great Northern Railway	$17,157,449.67	$19,494,220.86	$19,835,974.48	$16,417,044.63	$16,984,245.94
Willmar & Sioux Falls Ry.	324,672.00	563,339.01	726,338.84	546,787.10	.....
Duluth, Watertown & Pacific Ry.	50,032.64	48,713.44	71,014.75	60,273.82	.....
Montana Central Ry.	1,017,023.73	1,174,835.84	1,202,768.84	1,266,988.76	.....
Spokane Falls & Northern Ry.	207,041.09	300,560.12	334,841.97	343,263.48	.....
Washington & Great Northern Ry.	16,014.16	56,667.15	103,738.16	182,300.39	.....
Columbia & Red Mountain Ry.	6,590.80	4,371.82	*4,192.78*	*3,317.77*	.....
Minneapolis Union Ry.	200,299.11	200,296.70	207,552.28	207,070.11	.....
Duluth Terminal Ry.	19,338.97	18,511.52	18,605.39	17,428.75	16,852.31
Kootenai Valley Ry.	*14,164.44*	*13,639.69*	4,766.76	*9,225.97*	*28,785.20*
Iowa & Great Northern Ry.	.....	.....	.....	.....	.....
Minneapolis Western Ry.	.....	.....	.....	.....	6,924.86
Companies not Reporting to Interstate Commerce Commission:					
Minneapolis Western Ry.	17,148.15	18,556.18	15,611.16	7,508.75	.....
Union Terminal Ry.	.....	.....	17,855.73	59,330.56	67,917.57
Bedlington & Nelson Ry.	*9,678.77*	*7,913.30*	*4,931.84*	*14,186.95*	*18,684.40*
Kaslo & Slocan Ry.	*18,480.31*	*31,409.65*	*17,478.03*	*21,809.61*	*35,955.51*
Nelson & Fort Sheppard Ry.	*7,151.75*	*81.25*	*17,179.35*	*52,216.78*	.....
Red Mountain Ry.	10,651.37	*975.20*	*2,002.97*	1,614.06	.....
V. V. & E. Ry. & Nav. Co.	12,908.09	24,409.90	107,302.48	140,698.53	33,170.35
	$18,989,694.51	$21,850,463.45	$22,600,585.87	$19,149,551.86	$17,025,685.92

RECAPITULATION.

	1904.	1905.	1906.	1907.	1908.
Gross Earnings	$41,704,732.87	$45,309,508.66	$53,392,363.90	$57,519,960.44	$55,367,825.06
Operating Expenses	21,494,457.56	22,368,348.04	26,904,219.11	33,735,555.66	36,821,854.12
Taxes	1,475,341.56	1,576,656.19	1,834,662.17	2,142,200.37	2,307,343.81
Total Expenses and Taxes	22,969,799.12	23,945,004.23	28,738,881.28	35,877,756.03	39,129,197.93
Net Earnings	18,734,933.75	21,364,504.43	24,653,482.62	21,642,204.41	16,238,627.13
Other Income	276,310.75	517,339.29	492,426.26	728,035.04	1,006,861.06
	19,011,244.50	21,881,843.72	25,145,908.88	22,370,239.45	17,245,488.19
Deductions from Income	21,549.99	31,380.27	2,545,323.01	3,120,687.59	219,802.27
Net Income from Operation	$18,989,694.51	$21,850,463.45	$22,600,585.87	$19,249,551.86	$17,025,685.92

Accounting Department,
April 22, 1909.

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Mr. Teal: Mr. Holden, in connection with this exhibit, I notice that the operating expenses are not separated so as to show what went for maintenance of way and structures and equipment, etc. It is just bunched—the whole operating expense.

Mr. Holden: That is true.

Mr. Teal: I would like to know if, in analyzing this report there would be any objection to using the reports of the Interstate Commerce Commission, from which this was taken, so, if it is desired to analyze it we can do so.

Mr. Holden: No objection, except insofar as it gets us into difficulty over the record, that is all—in determining what is in the record and what is not. That is the only point I have in mind.

Mr. Dillard: I would suggest that in analyzing it Mr. Teal can use those reports, and, if it is necessary to take a part of them out, they can be taken out.

Mr. Holden: I was going to suggest, if you desire to take any other figures out of the report, if you will prepare a typewritten statement and submit it to me, we will stipulate that it may go into evidence in that form, if we do no disagree on it. I presume we will not.

Mr. Holden: During the last hearings I offered, through Mr. Hogeland, the chief engineer of the Great Northern road, Exhibits 16, 18 and 19. Those three exhibits had to do, respectively, with the actual cost over a period of recent years of grading, ballasting, track-laying and surfacing. Since that hearing (which was had last May, I believe) there has been a more minute and careful detailed examination of those records made, and there are some slight changes found to be necessary in the exhibits, to make them as nearly accurate as we now think it is possible to make them. And I would like to recall Mr. Hogeland for a few moments, for the purpose of offering the corrected exhibits, in lieu of those which have been found to contain these minor errors. If you will take the stand, Mr. Hogeland.

ALBERT H. HOGELAND, recalled on behalf of complainants, testified as follows:

Examined by Mr. Holden.

Q. Mr. Hogeland, when you were on the stand before, you offered in evidence an exhibit marked "16," relating to the cost of grading on the Great Northern lines, from the year 1898 to 1907. In order that the matter may be fresh in the master's mind, and in our own, I wish you would state in a brief way just what the purpose was of offering that exhibit, and what, from your point of view, it showed.

A. Exhibit 16 was prepared and offered, to show the actual cost of grading on the line specified in that exhibit, covering a period from 1898 to 1907; the exhibit showing the total yardage handled on the line specified, the prices paid for the different classes of material (earth, hardpan, loose rock and solid rock) and the average price paid contractors for all those materials; and, in addition to that, the total cost per yard of all material so handled. This would be the average cost as paid contractors, plus the charges for overhaul and transportation of outfits, men and materials, for the grading, and extra bills, as paid contractors, not covered by their price per yard.

Q. By their contract price?

A. By their contract price per yard. After making and presenting Exhibit 16, a very much more careful and detailed examination has been made of the vouchers from which the charges were entered in the construction books; and this has resulted in a number of changes being made necessary in this exhibit.

Q. That detailed examination was made when, and under what circumstances?

A. It was made during the months of May, June, July and August, and was made by the accountants of the Interstate Commerce Commission, working in conjunction with our own employes; going through the vouchers from which the charges had been entered in the construction books. In going through these vouchers in that detailed way, a number of charges were found which did not apply to the contract grading; so in that way such charges should not have been set against the contract yardage. So in preparing a new exhibit to take the place of Exhibit 16, all such charges have been cut out. Further than this, on some of the lines it was found necessary to

change and correct the yardage as moved by contractors. This was also discovered in going carefully through the vouchers.

Q. Explain that a little more fully, will you? You have used the expression "yardage moved by contractors," apparently, as distinguished from yardage moved in some other way. That was the point I had in mind in asking the question. Will you make that clear to us?

A. If we take a concrete example, item No. 4, on Exhibit 16, the line from Jennings to Boundary, the original yardage—

Mr. Holden: If you are going to use that, perhaps we had better tender these exhibits now.

The Witness: I can state it generally.

Q. Before dealing with a concrete case, perhaps you can state generally what you had in mind in answer to my question?

A. There were some instances where an additional piece of work was discovered, where either the yardage had been omitted in Exhibit 16 and the charges included, or vice versa; so for that reason, for six of the lines as shown in Exhibit 16, it was necessary to correct the yardage. On one or two of the lines it was also found that certain material had been moved during the period of ballasting, which was charged to grading, and the yardage not included by us in our Exhibit 16. Correction has been made for a feature of that kind.

Q. Have you had a new exhibit prepared, covering the same lines and work as shown in Exhibit 16?

A. Yes, sir.

Mr. Holden: I would like to have this marked "Exhibit 16 Corrected." I am going to ask leave to withdraw original Exhibit 16 and substitute this in its place. I presume there will be no objection to that.

Mr. Walter: If the master please, I think the proper method would be to allow original Exhibit 16 to remain, and Exhiibt 16 Corrected to follow; because we are not able at this time to consent to the withdrawal of original Exhibit 16. It having been made part of the record, it seems to me it might properly remain so.

Mr. Holden: I have no objection, except on the ground of making the record voluminous. Perhaps after ascertaining the extent or the lack of extent, and the difference between the two, we may be able to come to an understanding on that subject.

Mr. Walter: Yes. But at present we object. Later we may be able to agree.

CONTRACT GRADING QUANTITIES AND PRICES.

Built	Line	Mileage	Earth		Hard Pan		Loose Rock		Solid Rock		Total Yardage	Av. Cont. Price	Total Charges	Av. Cost per Yd.
			Cu. Yds.	Price	Cu. Yds.	Price	Cu. Yds.	Price	Cu. Yds.	Price				
1898	Cloquet to Boyleston	126.12	3,842,846	19.4	66,201	40.0	35,700	45.0	52,423	$1.00	3,997,170	22.5	$1,145,564.23	28.7
	Deer River to Fosston													
1899	Hibbing to Virginia	18.78	437,632	22.8	25,903	37.9	18,617	42.9	8,318	.999	490,470	25.7	180,409.56	36.8
1901	Brookston to Ellis	46.49	991,524	20.2	44,952	38.8	24,400	44.1	8,948	1.115	1,069,824	22.4	297,623.09	27.8
1902	Jennings to Boundary Line	50.98	633,155	18.8	485,808	28.0	111,167	38.2	126,824	.95	1,356,954	30.8	798,001.41	58.8
	Marcus to Republic	69.38	1,056,929	19.3	664,605	34.8	135,726	40.0	535,524	.943	2,392,784	41.6	1,221,445.58	51.0
	Kelly Lake to Nashwauk	10.64	146,397	30.9	35,746	38.0	9,135	43.0	4,456	1.15	195,734	34.7	83,121.68	42.5
	Boundary to Swinton	43.38	552,712	20.5	1,160,457	32.5	302,027	40.0	304,413	.938	2,319,609	38.6	1,106,996.68	47.7
	Laurier to Danville	16.50	327,911	21.1	189,416	35.0	53,790	40.0	75,607	1.00	646,724	36.0	259,024.96	40.1
1903	Souris to Westhope	16.41	237,086	14.1	3,657	35.0					240,743	14.5	71,119.14	29.5
	Granville to Mohall	46.97	694,357	13.3			260	35.0	125	.85	694,742	13.4	143,874.00	20.7
1904	Columbia Falls to Rexford	69.18	1,125,967	20.4	2,572,471	35.0	484,755	40.0	1,170,155	.893	5,353,348	44.3	3,352,853.58	62.6
	Thief River Falls to Greenbush	41.09	468,598	16.4							468,598	16.4	100,570.70	21.5
	Mohall to Sherwood	14.85	164,057	13.1							164,057	13.1	42,361.29	25.8
	Edmore to Munich	24.87	348,851	16.9	19,936	41.5	69	39.3			368,856	18.2	120,047.17	32.6
	Swinton to Fernie	9.82	91,969	20.8	139,567	47.7	8,147	40.0	38,780	.95	278,463	45.2	159,343.74	57.2
	Grand Forks to Phoenix	24.63	42,893	19.6	253,173	35.0	86,359	40.0	621,524	.95	1,003,951	71.9	810,533.27	80.7
1905	Granby Smelter Line	4.74	91,907	20.6	69,128	35.0	8,941	40.0	11,427	.95	181,403	31.7	69,474.19	38.3
	Towner Line	46.13	485,193	13.6							485,193	13.6	98,769.36	20.4
	York Line to Thorne	34.68	454,797	13.7							454,797	13.7	95,216.87	20.9
	Westhope Extension	12.76	115,059	14.3							115,059	14.3	28,448.86	24.7
	Forbes Extension	13.36	168,240	14.4			192	37.8			168,432	14.5	42,876.20	25.4
	Munich Extension	20.53	234,480	15.0					100	.90	234,580	15.1	55,982.00	23.9
	Curlew to Midway	14.52	182,133	18.0	87,207	35.0	15,619	40.0	43,279	.90	328,238	33.0	172,167.06	52.5
1906	Greenbush to Warroad	44.00	372,440	18.1							372,440	18.1	81,159.91	21.8
	Midway to Molson	28.89	242,552	20.7	453,184	35.0	280,679	40.0	947,714	.925	1,924,129	62.3	1,394,803.46	72.5
	Boundary to Keremeos	18.20	201,502	21.1	139,111	35.0	68,491	40.0	56,947	.925	466,051	36.8	203,487.27	43.7
	Thorne to Dunseith	7.61	122,432	15.7							122,432	15.7	23,314.81	19.0
	Molson to Oroville	27.82	244,095	20.1	661,308	35.0	139,492	40.0	274,726	.90	1,319,621	44.2	713,693.05	54.7
	Sioux City to Ashland	103.15	2,821,252	17.6	134,903	35.0	720	40.0	2	.80	2,956,877	18.4	711,819.33	24.1
1907	Kelly Lake to Fermoy	23.40	656,642	36.0	62,083	42.0	11,277	47.0	2,653	1.15	732,655	36.7	397,222.23	54.2
	Aneta to Devils Lake	57.72	1,364,434	16.3	1,464	35.0	12,002	40.0	9	.90	1,377,909	16.6	302,290.51	21.9
	Oroville to Boundary	20.64	202,787	18.8	279,498	35.0	111,601	40.0	316,765	.941	910,651	52.5	557,028.76	61.2
	Crosby Line	89.16	1,238,996	17.1	15,006	30.6	130	35.0	827	.80	1,254,959	17.4	340,628.70	27.1
	Billings & Northern	194.16	5,756,915	20.5	1,682,424	35.3	1,053,799	41.5	1,602,305	.818	10,095,443	34.9	4,850,178.11	48.0
	Portage la Prairie Line	77.01	823,525	15.4	400	35.0					823,925	15.4	211,074.17	25.6
	Brandon Line	69.45	1,549,848	20.3	12,548	30.0	141,998	44.8	5,498	.826	1,709,892	22.6	552,615.27	32.3
	Morden Line	15.25	201,408	15.0							201,408	15.0	37,340.23	18.5
	Totals	1,553.20	28,693,523	19.3	9,260,156	34.7	3,115,093	40.7	6,209,349	.947	47,278,121	33.6	20,832,480.43	44.1

TOTAL CONTRACT QUANTITIES ON ALL ABOVE LINES:

	Cu. Yds.	Cost	Average Per Yard.
Earth	28,693,523	$ 5,545,074.31	19.3
Hard Pan	9,260,156	3,211,293.53	34.7
Loose Rock	3,115,093	1,270,666.25	40.7
Solid Rock	6,209,349	5,876,720.69	94.7
Total	47,278,121	$15,903,754.78	33.6

Chief Engineer's Office.

Q. Mr. Hogeland, I wish you would now take up Exhibit 16 Corrected, and indicate the essential points of difference between it and Exhibit 16, taking your own way and time. Make it clear to the master in what the difference consists and what the difference is in the final result?

A. The first change is found in the cubic yards of earth in item 4, being the line from Jennings to the Boundary Line. In former Exhibit 16 this was shown as 608,850 cubic yards; in the corrected exhibit it is shown as 633,155. This correction was due to a change of line at Rexford, where the charges appeared, but the yardage did not appear in the former Exhibit 16. The next change is in the line from Columbia Falls to Rexford.

Q. Wait just a minute. I do not know as it will be necessary to go through all these totals in detail; but I want to go far enough to make it clear. You say the yardage did not appear in item 4 on the former exhibit. Do you mean that in taking off from the construction books the yardage which went into this figure in the former exhibit, certain yardage was omitted, or just what do you mean by that?

A. Yes, certain yardage was omitted.

Q. Was not drawn off the construction books and put into the total shown on the first exhibit?

A. Yes, sir; not drawn off the construction books or from our estimate sheets.

Q. Now, let's follow out that item clear across the sheet, as perhaps it may, in a large way, illustrate the differences. That increased the number of yards in that piece of work, as I understand you, from 608,850 to 633,155?

A. It increased the yards of earth to that amount. The yards of hardpan were increased from 466,599 to 485,808. The yards of loose rock were increased from 110,921 to 111,167. The yards of solid rock were increased from 126,578 to 126,824. And the total yards were increased from 1,312,908 to 1,356,954.

Q. And that produced a change in the average contract price, did it not?

A. Yes, sir; produced a change in the average contract price.

Q. Of how much?

A. Making it 30.8 cents per yard instead of 31 cents.

Q. Now, will you follow up that case clear to the end of your exhibit, and show the total change in result?

A. The total charges, as shown on original Exhibit 16, for that line, were $644,694. The charges shown on Corrected

Exhibit 16 are $798,001.41. Dividing the total charges by the total yardage produces an average cost per yard of 58.8 cents instead of 49.1 cents. In addition to the increase in yardage, there has been a considerable increase in the total charges, due to the omission of a portion of the charges of that line from the construction book. That was also discovered in going through the vouchers for that line. The endeavor, in making the correction in this exhibit, has been to correctly show the total charges to grading, corresponding to the total yardage handled by the contractors; and all of the corrections that have been made have been to do that.

Q. What was the purpose of preparing this kind of a computation, and this exhibit?

A. The purpose was to show, from our experience, what the increased cost per yard had been, for grading, over and above what was paid contractors. It has been admitted by all of the engineers, in these cases, that there is a certain amount that should be added to contract prices, to cover the full cost of the work.

Q. You say "the full cost of the work." By that do you mean all of the work, or the work done by the contractor, or the yardage handled by the contractor?

A. I mean the yardage handled by the contractor.

Q. You mean, then, that there is some additional cost involved, in every experience, over and above the average price paid the contractor for his work by the yard? There is an additional expense that attaches to that work which is embraced in the contract?

A. Yes, sir.

Q. While you may have stated it before, will you state now in what that additional expense consists? Give the master some idea of what the items are, ordinarily?

A. When a contract for grading is let, it is provided that the railway company will furnish free transportation for the contractor's outfits, men and materials, used in the grading; will pay for over haul over and above a certain fixed distance; will also pay extra bills covering grading work, which cannot be measured, at the contract grading prices. So the increased cost per yard of the grading work, over and above what is paid the contractor according to his fixed prices in the contract, is produced by the things which the railway company furnishes in that way, or pays for in that way.

Q. Now, I do not believe it is going to be necessary to go through all the items, unless the other side desires to question you about certain of them. After your further examina-

tion of your books in relation to this fourth item, Jennings to the Boundary Line, the result in that case was to show a considerable wider spread between the average contract price and the average price per yard for all expenses incident to that work.

A. Yes, sir. And that is pretty largely due to the large item of charges which did not appear or was not taken from the construction book, but was found in going through the vouchers. I think probably an explanation of the Columbia Falls to Rexford line would make the whole statement a little clearer.

Q. I think perhaps you are right. Take that up—the item opposite the figures "1904."

A. In original Exhibit 16 we showed for earth 1,010,675 cubic yards; in Corrected Exhibit 16 we show 1,125,967. Under "hardpan," Exhibit 16 showed 2,591,720; Corrected Exhibit 16, 2,572,471. Under "loose rock," Exhibit 16 showed 485,001 yards; Corrected Exhibit 16 shows 484,755 cubic yards. Under "solid rock," Exhibit 16 showed 1,170,401; Corrected Exhibit 16 shows 1,170,155 cubic yards. Under "total yards," original Exhibit 16 showed 5,257,797; Corrected Exhibit 16, 5,353-348 cubic yards. These changes in the yardage were brought about partly by the sag raising which was done during the ballasting, the charges for which appeared under total charges to grading, but the grading was not shown in the contract yardage; also by some changes in classification which the final voucher showed had been made in making settlement with contractors, but was not shown in the construction books from which these items were drawn. The net result is to show on Corrected Exhibit 16 the average contract price of 44.3 as against 44.7 cents on original Exhibit 16, and to show an average cost per yard, after dividing total charges by total yardage, of 62.6 per yard instead of 63.6 cents per yard. The corrections as made in the Columbia Falls to Rexford line illustrate the reason for the various corrections that have been made.

Q. So in this case the average cost per yard has been reduced one cent from the average cost shown in orignal Exhibit 16?

A. Yes, sir.

Q. And what you have said about these two items, generally speaking, explains the changes that have been made in such other items wherein you have found reasons to make change found in error of amount in your former figures?

A. Yes, sir. That covers the changes so far as the yardage

is concerned. In regard to the total charges, it should be said that we found, in going back to the original vouchers, that there were a great many charges to grading made on account of work done by the railway company outside of the work done by the contractor. So, in order to have the total charges show correctly for the contract yardage, it was necessary to cut out charges of that kind.

Q. You found charges for work done by the railroad company's force, but which was not for work done by the contractor or under the contractor, and therefore it would be improper, in the endeavor to show only the charges that related to the contractor's work, to include those charges for work done by the railroad company's force?

A. Yes, sir, that is true. In order to have the charges in the column of "Total Charges" show only the charges to grading as done in moving the yardage by the contractor, it was necessary to cut out many charges made for any other work; for instance, yardage moved by the railway company in grading additional sidetracks, or for a stretch of double track, those charges being proper enough as against grading, but not right to show them in this statement as being done by the contractor and applying to the contract yardage.

Q. If I understand you, the column as it now stands, headed "Total Charges" is, after the revision you have spoken of, solely applicable to yardage under the column "Total Yardage," which is the yardage handled by the contractor?

A. Yes, sir; that is what it now shows.

Q. Since you put in Exhibit 16, do I understand that all of the items shown on the exhibit have been re-examined? I mean, that all of the different pieces of work have been re-examined?

A. Yes, sir. Each piece of work has been examined, the original vouchers gotten out and checked in the way that I have indicated, so as to have the total charges represent accurately the charges to the grading as shown under "Total Yardage."

Q. I find that there are thirty-seven different pieces of work on the exhibit. How many different pieces did you find it necessary to change in the item of cubic yards of earth?

A. We changed six.

Q. And under the column entitled "Hard pan," how many changes were made?

A. Three.

Q. "Loose rock?"

A. Three.

Q. "Solid rock?"
A. Three.
Q. And under the column "Total Yardage?"
A. Six.
Q. Under the head "Average Contract Price," there were how many changes in price?
A. Five.
Q. Now, that must mean that where there were changes in six of the cases under the head "Total Yardage," at least once the change was so slight as not to show itself in the total average contract price, was it not?
A. Yes, sir.
Q. It was only in five of these cases that the change was of sufficient importance in the division to make it apparent, in carrying the figures out to one decimal that it would change the first decimal. Now, directing your attention to the fourth line from the bottom—the Billings and Northern; that line seems to have changes all the way through. What was the condition of that line when you made up Exhibit 16 and gave your testimony about six months ago?
A. The charges had not all been entered in the construction book at that time.
Q. That was a new line, running from where to where?
A. Running from Billings to Armington, near Great Falls, Montana.
Q. Practically the connection from Billings; the junction of the Northern Pacific and the Burlington with the Great Northern line at Great Falls?
A. Yes.
Q. At the time you made up your former exhibit, the charges had not all come in and been spread upon the books; is that the reason why the changes were made necessary in Exhibit 16 corrected?
A. Yes, sir, that was the principal reason for the changes in Exhibit 16 corrected.
Q. At the foot of this exhibit you have a table entitled "Total Contract Quantities" on all above lines?
A. I think it would be well to show what the net result of Exhibit 16 corrected is as compared with Exhibit 16.
Q. Yes. I overlooked that. I will withdraw my question. I wish you would take up the totals of Exhibit 16 corrected and show the net changes.
A. The total yards of earth, in Exhibt 16, were 28,675,436; Exhibit 16 corrected, 28,693,523. Hardpan, Exhibit 16, 9,087,-261; Exhibit 16 corrected, 9,260,156. Loose rock, Exhibit 16,

3,129,458; Exhibit 16 corrected, 3,115,093. Solid rock, Exhibit 16, 6,011,326; Exhibit 16 corrected, 6,209,349. Total yards, Exhibit 16, 46,903,481; Exhibit 16 corrected, 37,278,121. The average contract price in Exhibit 16 33.4 cents; in Exhibit 16 corrected, 33.6 cents.

Q. An increase of .2 cents as the result of these corrections?

A. Yes, sir. Total charges, Exhibit 16, $20,973,408; Exhibit 16 corrected, $20,832,480.43. The average cost per yard Exhibit 16, 44.7 cents; Exhibit 16 corrected, 44.1 cents.

Q. A reduction of .6 cents?

A. A reduction of .6 cent per yard. This shows that the difference between the average contract price and the average cost per yard was, on original Exhibit 16, 11.3 cents per yard, and, on Corrected Exhibit 16, 10.5 cents per cubic yard.

Q. A reduction of .8 cent?

A. A reduction of .8 cent per yard?

Q. Now, will you analyze the table at the bottom of this exhibit?

A. The table at the bottom of the exhibit shows the total contract quantities on all above lines.

Q. Of course the changes which you have already referred to, as shown in the totals of the table in detail above this table at the foot, are correspondingly shown in the table at the foot?

A. Yes; it is simply placed there to bring together the total contract quantities on all of the above lines and the average price per yard, all of which I have just read off.

Q. The 37 pieces of work shown in the exhibit run from 1898 to 1907, both inclusive, as I observed?

A. Yes, sir.

Q. I think at this time it would be important for you to analyze or explain your process of reasoning in claiming, as you do, that this exhibit justifies the prices which you have shown in your Exhibit 15 in this case, which is the condensed exhibit of the cost of reproduction of the system. To illustrate, you show in the total at the foot of Exhibit 16 corrected that the average contract price per yard for earth work of these 37 different pieces of work, done during the ten years in question, was 19.3 cents per yard; similar figures for hard pan, loose rock and solid rock. Now I wish you would explain the process you have gone through in arriving at your statement that the experience shown on this exhibit justifies you in the prices you have stated to be your opinion as to what it would cost in reproducing these lines.

A. At the foot of Corrected Exhibit 16 we find the average price paid to contractors per yard is, for earth 19.3 cents; for hard pan 34.7 cents; for loose rock 4.7 cents; for solid rock 94.7 cents. As before stated, we find from this Exhibit 16 corrected the difference between the average contract price and the average cost per yard is 10.5 cents. Adding this to the average per yard paid contractors produces, for earth 29.8 cents; for hard pan 45.2 cents; for loose rock 51.2 cents; for solid rock 105.2 cents. The prices which I have used in Exhibit 15, under the item of grading ore, for earth 31 cents, for hard pan 45 cents, for loose rock 55 cents, and for solid rock $1.10. So that the prices as obtained by applying the 10.5 cents increase over average contract prices on Exhibit 16 corrected does not quite produce the price per yard which I have used in Exhibit 15, except in the item of hard pan. But I think that small difference is fully accounted for by the fact that in Exhibit 16 corrected a considerable portion of the grading goes back to a period when the contract prices were much lower than they are at the present time; for instance, all of the construction from 1898 to 1903 and 1904 the contract prices were much lower than they are at the present time. So that in a reproduction estimate I think we are justified in using somewhat higher prices than would be shown from the average obtained from Exhibit 16 corrected.

Q. You also offered in evidence, Mr. Hogeland, Exhibit 18, entitled, "Actual cost of ballasting." I will ask you if since that time you have made another Exhibit 18, and, if so, why and what the changes are? Before stating what the changes are I would like to have you give me the exhibit.

The witness produced a paper which was marked Hogeland Exhibit 18 corrected.

COMPLAINANT'S EXHIBIT 18 (HOGELAND) CORRECTED.

GREAT NORTHERN RAILWAY COMPANY.

ACTUAL COST OF BALLASTING LINES CONSTRUCTED 1901-1908, AS SHOWN BY CONSTRUCTION BOOKS.

Date.	Line.	Mileage.	Cu. Yds. Ballast.	Train Service.		Labor, Tools and Supplies.		Repairs of Equipment		Pit Tracks		Stripping Pits		Transportation		Total	
				Charges	Per Yd.	Charges.	Per Yd.	Charges	Per Yd.	Charges	Per Yd.	Charges	Per Yd.	Charges	Per Yd.	Charges	Per Yd.
1901	Brookston to Ellis, Minn	46.49	262,407	$30,314.53	11.5	$83,143.87	31.7	$ 5,181.00	2.0					829.62	0.4	$ 119,469.02	45.6
1902	Jennings to Rexford, Mont	42.26	126,780	24,165.85	19.1	57,838.96	45.6	4,987.13	3.9					11,378.34	9.2	98,370.28	77.8
	Marcus to Republic, Wash	69.38	118,404	22,929.10	19.4	38,906.84	32.8	6,163.49	5.2					8,334.33	7.1	76,333.76	64.5
	Kelly Lake to Nashwauk, Minn	10.64	21,280	3,415.72	16.0	7,178.25	33.7	483.70	2.3							11,077.67	52.0
	Boundary to Swinton, B. C	43.38	86,760	22,377.29	25.8	34,161.47	39.3	691.15	0.8					4,773.79	5.5	62,003.70	71.4
	Laurier to Danville, B. C	16.50	32,000	6,788.45	21.2	10,253.24	32.0	2,000.14	6.3					218.07	0.7	19,259.90	60.2
1904	Columbia Falls to Rexford, Montana	69.18	213,931	31,082.15	14.5	58,222.69	27.2	1,895.54	0.9	2,003.59	1.0			32,097.82	15.0	125,301.79	58.6
	Swinton to Fernie, B. C	9.82	33,050	5,852.54	18.0	9,990.86	30.1	1,230.29	3.6	154.82	0.4			469.54	1.4	17,699.05	53.5
1905	Curlew to Midway, Wash	14.52	42,600	5,729.50	13.4	10,302.39	24.2	1,751.44	4.1	74.96	0.2			1,909.77	4.4	19,768.06	46.3
1906	Molson to Orville, Wash	27.82	78,610	10,183.12	13.0	33,166.42	42.2	746.42	0.9					5,250.17	6.7	49,346.13	62.8
	Midway to Molson, B. C	28.89	87,279	9,786.99	11.2	32,923.54	37.7	2,034.68	2.4	252.88	0.3			7,532.81	8.6	52,530.90	60.2
	Sioux City to Ashland, Neb	103.15	231,353	29,659.12	12.8	77,499.78	33.5	10,652.47	4.6	10,670.47	4.6	2,994.64	1.3	6,716.96	2.9	138,193.44	59.7
1907	Aneta to Devils Lake, N. D	57.72	185,699	27,259.34	14.7	78,980.68	42.5	1,090.60	0.6	1,714.63	0.9	2,888.80	1.5	2,110.54	1.1	114,044.59	61.3
1908	Armington to Laurel, Mont	194.53	543,018	108,957.25	20.1	261,672.52	48.2	5,594.22	1.0	14,664.83	2.7	37,303.24	6.8	43,642.17	8.0	471,834.23	86.8
		734.28	2,063,171	$338,500.95	16.4	$794,241.51	38.5	$44,503.27	2.2	$29,536.18	1.4	$43,186.68	2.1	$125,263.93	6.1	$1,375,232.52	66.7

In this statement the Charges for "Rental of Equpiment" as shown in the Construction Books have been cut out. Instead thereof, it would be proper to add an item for "Depreciation of Equipment."

Under "Train Service" is included all train service for loading, hauling, unloading Ballast.

Under "Labor, Tools and Supplies" is included all labor loading, unloading, placing ballast under ties, tamping, dressing and lining track, also steam shovel supplies and track tools.

Under "Pit Tracks" and "Stripping Pits" are included such charges as appear in the Construction Books so designated: on many lines the cost of putting in pit tracks and stripping has been charged directly to labor and cannot be separated.

Office of Chief Engineer,
St. Paul, November 22, 1909.

A. The same analysis and examination of the vouchers which were made for grading was also made for ballasting, and the corrections have been made for the same reason, so as to have the charges correctly represent the yardage handled.

Q. I notice the first item, Brookston to Ellis, where there is a considerable change. Perhaps that would bear some explanation?

A. The line from Brookston to Ellis in Exhibit 18 showed 143,100 cubic yards of ballast; in Exhibit 18 corrected we show 262,407. This is because in original Exhibit 18 we use the yardage of ballast that is now in the line; but it appears from an examination of the vouchers and of all of the records bearing on the ballasting done on that line that there were moved at that time 262,407 cubic yards for which the charges in the construction books appear as charged to ballasting. A portion of that yardage was used in taking out sag and is not properly ballasted, but in order to have the charges and the cubic yards agree we have taken the yardage moved at that time and as shown by the charges. There are two other corrections in the cubic yards. The line Midway to Molson, Exhibit 18, showed 87,079 cubic yards; Exhibit 18 corrected shows 87,279, which I believe was a clerical error. The line from Armington to Laurel, on Exhibit 18 showed 559,419 cubic yards; Exhibit 18 corrected shows 543,018 cubic yards, being a reduction.

Q. Is that part of the Billings and Northern Line you spoke of a while ago?

A. Yes, sir; and the difference in the yardage is brought about by cross-sectioning of the ballast pits, which has been done since the line was completed, which is quite recent, the quantities used in original Exhibit 18 being partly estimated from carloads.

Q. When you say "cross-sectioning of the ballast pits," explain what you mean?

A. I mean an accurate measurement of the ballast pits from which the material was taken.

Q. You have got as nearly as may be the actual number of cubic yards taken out?

A. Yes, sir. I desire to explain that by saying that as ballast work progresses it is usually the practice to estimate the ballast by car measurement, but after the work is completed the ballast pits are carefully measured, from which a correct amount of material handled is obtained.

Q. At the time you made up your original Exhibit 16 that measurement had not been made?

A. No, sir. The line had only recently been put in operation.

Q. Now going back to the Brookston to Ellis line, the net result there was to make a considerable reduction from the total price per cubic yard shown in original Exhibit 16, which was then 78 cents; now it is 45.6 cents?

A. Yes, sir.

Q. Corresponding changes, some slight additions and some slight reductions, exist in five other items, I believe, on this exhibit. Will you now state the total results in Exhibit 18 corrected and indicate the amount of the total change in the total price per yard?

A. Exhibit 18 showed total cubic yards of ballast 1,960,065; Exhibit 18 corrected shows 2,063,171. The total charges to ballasting in Exhibit 18 were $1,300,057; in Exhibit 18 corrected it is $1,375,232.52. Dividing the total charges by the total cubic yards of ballast, produced on Exhibit 18, 66.3 cents per cubic yard, and on Exhibit 18 corrected 66.7 cents.

Q. That is an advance of four-tenths of a cent in the total cost per yard?

A. Yes, sir.

Q. Have you also revised your Exhibit 19, which is entitled "Actual cost of track laying and surfacing," and have you another exhibit on that subject?

A. We have.

Mr. Holden: We offer in evidence Exhibit 19 corrected, entitled "Actual cost of track laying and surfacing."

ACTUAL COST OF TRACKLAYING AND SURFACING

Built	LINE	Miles Laid	Train Service		Labor, Handling Material and Laying Track		Surfacing Track		Repairs of Equipment		Transportation		Total Charges	Per Mile
			Charges	Per Mile	Charges	Per Mile	Charges	Per Mile	Charges	Per Mile	Charges	Per Mile		
1898	Cloquet to Boyleston Deer River to Fosston	159.06	$ 18,153.89	$ 114	$ 57,081.55	$359	$ 22,551.66	$142	$ 2,252.44	$14	$ 1,154.58	$ 7	$ 101,194.12	$636
1899	Hibbing to Virginia	22.76	1,895.17	83	12,946.29	569	.....	.....	.....	.....	241.20	10	15,082.66	662
1901	Brookston to Ellis	54.64	6,416.54	118	20,788.29	380	.....	.....	286.00	5	165.92	3	27,656.75	506
1902	Jennings to Rexford	47.26	7,583.57	160	23,808.86	505	.....	.....	.....	.....	2,256.51	48	33,648.94	713
	Marcus to Republic	75.74	20,264.34	268	40,073.10	529	.....	.....	2,453.14	32	1,666.87	22	64,457.45	851
	Kelly Lake to Nashwauk	11.29	1,387.13	123	3,280.98	291	2,937.81	260	.....	.....	.....	.....	7,605.92	674
	Boundary to Swinton	49.66	11,019.17	222	23,549.13	474	.....	.....	463.16	9	933.62	18	35,965.08	723
	Laurier to Danville	19.50	2,734.78	140	9,443.06	484	2,711.37	139	221.95	11	43.61	2	15,154.77	776
1903	Souris to Westhope	17.74	1,026.04	58	10,021.85	565	7,200.08	406	139.88	8	212.96	12	18,600.81	1049
	Granville to Mohall	49.96	9,149.40	183	15,600.14	313	11,064.14	221	1,181.04	23	333.65	7	37,328.37	747
1904	Columbia Falls to Rexford	84.96	21,330.28	251	50,207.32	591	.....	.....	36.50	.....	5,532.45	55	77,106.55	897
	Thief River Falls to Greenbush	43.70	9,083.05	207	12,930.16	296	12,203.62	280	11.88	.....	201.17	5	34,429.88	788
	Mohall to Sherwood	16.83	3,010.81	179	6,661.50	396	5,287.10	315	387.04	23	194.41	11	15,540.86	924
	Edmore to Munich	26.83	4,587.48	171	9,443.54	352	10,912.88	407	582.16	22	289.07	11	25,815.13	963
	Swinton to Fernie	11.30	1,941.98	171	7,959.60	705	.....	.....	.....	.....	93.91	9	9,995.49	885
1905	Towner Line	49.71	6,083.28	122	12,890.88	260	10,988.91	221	679.68	14	250.08	5	30,892.83	622
	York Line	37.12	4,968.84	134	10,179.93	274	9,673.52	261	522.64	14	238.51	6	25,583.44	689
	Westhope Extension	14.16	1,420.53	100	4,282.78	302	4,070.73	288	182.88	13	109.09	8	10,066.01	711
	Forbes Extension	14.92	1,442.85	97	6,260.71	419	5,952.37	399	.....	.....	106.66	7	13,762.59	922
	Munich Extension	23.15	3,650.21	157	8,961.76	387	7,119.11	308	465.09	20	171.27	7	20,367.44	879
	Curlew to Midway	16.01	3,906.05	243	8,903.03	557	.....	.....	74.30	5	371.87	24	13,255.25	830
1906	Midway to Molson	33.35	10,573.86	317	22,072.48	662	98.86	3	784.44	23	1,506.56	46	35,038.20	1051
	Sioux City to Ashland	121.23	16,081.64	133	58,104.41	479	2,607.92	22	293.79	2	3,207.17	26	80,294.93	662
1907	Kelly Lake to Fermoy	26.38	5,907.74	224	14,093.18	533	8,058.43	305	225.16	9	309.43	12	28,593.94	1083
	Aneta to Devils Lake	66.90	18,075.52	270	39,573.33	593	.....	.....	157.33	2	375.05	5	58,181.23	870
	Berthold to Crosby	95.67	25,160.45	263	42,549.37	445	28,108.52	293	184.99	2	936.57	10	96,939.90	1013
	Portage la Prairie	83.58	20,827.61	250	36,265.24	433	51,752.51	619	270.73	3	302.05	4	109,418.14	1309
	Brandon Line	76.67	14,241.37	184	29,511.23	389	49,483.53	643	716.82	9	644.10	8	94,597.05	1233
	Morden Line	17.58	4,766.49	271	8,985.66	511	15,143.64	861	.....	.....	24.24	1	28,920.03	1644
1908	Armington to Laurel	229.08	76,393.14	333	128,205.56	560	.....	.....	4,812.52	21	8,728.43	38	218,139.65	952
	Totals, 1898 to 1908	1596.74	333,085.21	209	734,634.92	460	267,926.71	167	17,385.56	11	30,601.01	19	1,383,633.41	866
							Less Estimated Cost of Laying 940 Switches at $25						23,500.00	15
													$1,360,133.41	$851
	Totals, 1904 to 1908	1089.13	253,455.18	233	518,041.67	475	221,461.65	203	10,387.95	10	23,592.09	22	1,026,938.54	943
							Less Estimated Cost of Laying 733 Switches at $25						18,325.00	17
													$1,008,613.54	$926

In this statement the Charges for "Rental of Equipment" as shown in the Construction Books have been cut out. Instead thereof, it would be proper to add an item for "Depreciation of Equipment."

Under "Train Service" is included all Train Service in Material Yard, hauling Track Materials to the front, handling tracklaying machine, and moving boarding outfits and men.

Under "Labor, Handling Material and Laying Track" is included all labor in Material Yard, handling material, curving rail, laying tracks, putting in switches, placing tie-plates, also Tracklaying Tools and Supplies.

Under "Surfacing Track" is included Labor and Tools surfacing Track, to put it in condition for passage of Construction Trains, and keep it in condition until ballasting is done.

Under "Repairs of Equipment" is shown charges to that item for Equipment actually in use tracklaying and surfacing.

Under "Transportation" is shown transportation charges for men engaged on the work tracklaying and surfacing.

Chief Engineer's Office,
November 22, 1909.

Q. Will you explain this exhibit?

A. The same detailed examination of the vouchers and the records from which the construction books were prepared, showing the cost of track laying and surfacing, has resulted in a corrected exhibit for this purpose. This is partly due to corrections in the miles of track laid and surfaced and partly due to corrections in the total charges for the work. In one instance in particular it was found that charges were made against surfacing of track which properly should have been a charge against ballasting.

Q. What instance was that?

A. That would be on the line from Brookston to Ellis, the third item, where a reduction was made in the total charges from $39,118.15 to $27,656.75.

Q. I notice in the first item Cloquet to Boyleston and also Deer River to Fosston, which seems to be a consolidated item, there is a considerable change in mileage.

A. Yes, sir. That was brought about by some side tracks and some double tracks having been laid during the construction period and the charges entered but was not taken into account in preparing the original Exhibit 19; so that in order to have the total charges correspond to the total miles for which the charges were made it was necessary to make a correction, and that principle has been followed through in preparing the new exhibit.

Q. The other changes of mileage are very inconsiderable, I note?

A. Well, there is one considerable change in the third item. Original Exhibit 19 showed 49.98 miles; corrected Exhibit 19 shows 54.64 miles. That was due to some side tracks having been omitted from the original Exhibit 19, the charges being shown. In other words the charges were in but not all of the mileage was in on which those charges were made.

Q. Unless there is some other detail of the table that you think it important to call attention to, you might speak now of the changes in the totals.

A. This corrected Exhibit 19 shows a total mileage of track laid and surfaced of 1,596.74 miles, as against 1,565.87 miles in original Exhibit 19. It shows total charges of $1,383,633.41 as against $1,439,164.93 in the original Exhibit 19. Dividing the total charges by the total mileage, produces $866 per mile on corrected Exhibit 19, as against $919 on original Exhibit 19. Deducting the estimated cost of laying 940 switches, amounting to $15 per mile, produces $851 per mile, according to Exhibit 19 corrected, and $904 per mile on original Exhibit

19. This statement of track laying and surfacing, like the statement of grading, covers a period of much lower prices than prevail today. For that reason I have made a second summary, on corrected Exhibit 19, being the totals from 1904 to 1908. This covers a mileage of 1,089.13 miles. The total charges for track laying and surfacing amounted to $1,026,-938.54, or an average cost per mile of $943. Deducting for laying 733 switches an average of $17 per mile produces $926 as the net cost per mile for track laying and surfacing as shown by this statement for the period of 1904 to 1908.

Cross-Examination by Mr. Teal.

Q. Taking up your corrected Exhibit 16, I would like to see if I understand the purpose of that exhibit. It covers a period of contract grading, with quantities and prices, from 1898 to 1907, showing the average contract price and then the average cost per yard. I take it that that exhibit is intended to show what it cost the Great Northern Railway Company to do the work set out therein during that period. Is that correct?

A. Yes, sir.

Q. Now, when you say that that is what it cost the Great Northern Railway Company, is there in these total charges that are added the transportation charges which you have referred to at different times on the work?

A. Yes, sir, the transportation charges for contractors' outfits, contractors' men, powder and supplies used in the grading.

Q. Is that at prices which the contractors actually paid to have their man hauled, their outfits hauled, so that those prices appear as part of the income of the Great Northern Railway during that period?

A. No, sir, so far as transportation over the Great Northern lines is concerned, the contractors did not pay it, but it is a charge which the company has made for transporting such outfits, men and supplies.

Q. In other words, the transportation charge is made as a charge which appears against the cost of the road. That is correct, isn't it?

A. Yes, sir.

Q. But there is no credit given to the income side of the road for transportation received for hauling that, is there?

A. I don't remember—

Q. In other words that will not appear in the income account of the company, will it?

A. I can't tell you about that.

Q. Let me give you an illustration. When you were on the stand previously you spoke of some short piece of road in which, if I remember correctly, you said that there were some 12 or 15 thousand men hauled there within a limited time. Did you use that as an illustration?

A. I don't remember the number, but I think that referred to the Billings & Northern Railroad.

Q. There was a very large number, was there not?

A. Yes, sir.

Q. And you also testified that as part of the construction of that road, the transportation charges of those men were figured in at the regular rates of transportation. Isn't that correct?

A. Yes, sir.

Q. Now, I ask you if the transportation of those men which was figured in against the cost of this road appeared in the revenue side of the road so that the public would get the benefit in the revenue side amongst the earnings as well as be charged with the carriage as a part of the cost of the production of the road?

Mr. Holden: Mr. Hogeland is not the accounting officer.

Mr. Teal: If he says he does not know you will perhaps be very glad to furnish the information. If he does know, he can say so.

A. I can't tell you as to how it would appear for transportation furnished directly by the Great Northern Company, but for the line that you mentioned, the Billings & Northern, a considerable portion of the transportation was paid directly by the Great Northern Company to the other companies who hauled the men or the outfit.

Q. Of course, then, that would appear in the income?

A. Undoubtedly.

Q. But I was speaking of the Great Northern. To come back, then, this does represent when we get out here the average cost per yard, every element of cost that has entered into the moving of any of the material mentioned therein, as nearly as you can judge.

A. Yes, sir, as nearly as we can get it.

Q. In estimating the reproduction (as some call it; some call it reproductive value of this road) there is one question I would like to ask you. During all the time there is a constant charge, varying in amount, for maintenance of way and structures, that appears in the charges for operation? Of course you understand that to be the case?

A. Yes, sir.

Q. That varies, I suppose a thousand to fifteen hundred dollars per mile of road per year. Now, what sort of work would be done or be chargeable to that maintenance of way and structures account?

A. All of the work which the section forces are engaged upon in the up-keep of the track, carpenters in repairing bridges and buildings; that would be a portion of the charges.

Q. In the up-keep of the track and of the grades, these section men are constantly engaged more or less in ballasting, are they not, or keeping the track in order in that way?

A. They are engaged in repairing the ballast, but not in the ordinary ballasting work.

Q. Oh, I understand. For instance, through a cut or anything of that kind, if there is a small slide or the banks need sloping or the side of the grades need filling up, the section men do that, don't they?

A. They do to a limited extent.

Q. That is what I mean. Could you give any idea, running over a series of years, like you have taken the Great Northern here, to what extent the work that has been done by the section men through a series of ten years on the Great Northern and which has been charged to the operating expense account, would appear in this reproductive estimate?

A. I don't think that would appear at all.

Q. Then, if any cuts were widened or the slopes fixed up, or anything like that, there would be no allowance for that; that would not appear as—

A. Our statement of cost of reproduction is based on reproducing the system as nearly the way it exists now as practicable.

Q. That is what I understood.

A. Taking the cuts and the fills as near the way they exist now as we can.

Q. That is what I understood.

A. But necessarily, in figuring the cost of reproduction, you have to consider that as being done during that period. Therefore it appears in our reproduction statement as total yards to be handled.

Q. That is what I understood. Assuming any allowance would be made,—not by you, but any allowance be made by anyone analyzing these figures, there is no allowance made for section men during the course of the year, or anybody else, for the maintenance of this way and structure that enters into the operating account.

A. No, I have not taken it into consideration in that way.

Q. Now, in connection with this exhibit here, you stated that the average cost per yard was 10.7 cents over the average contract price?

A. 10.5.

Q. 10.5, was it?

A. Yes.

Q Now, if I understand that correctly, that average cost per yard was arrived at by adding up these columns and dividing it by the number of different items.

A. By the total yardage.

Q. I notice here, in 1907, a line from Kelly Lake to Fermoy, 23.40 miles, on which the contract price on earth was 36 cents which is very, very much higher than any other contract price for like material in the table at any place. That must have been up in northern Minnesota, wasn't it?

A. Yes, sir.

Q. Through wet land or some condition under which it was a hard piece of road to build; is that the idea?

A. Rather difficult, yes, sir.

Q. So that would account for that high price in there, would it not?

A. Partly so, yes, sir.

Q. Do you think that your method of arriving at the amount that should be charged to the contract price, resulting from the average advance as figured out by you, is fair as applied to earth?

A. That is, you mean is it fair to add this 10.5 cents to the different classes of material?

Q. No, the earth.

A. The same?

Q. Yes.

A. Apply it the same to all classes of material?

Q. Yes.

A. Yes, I think it is.

Q. Now, you take it on your own exhibit there, and I notice that there are eight different items where earth only was handled. On those eight different items where earth only was handled, the average cost per yard is very much less than the result you arrived at by taking 19.3 per cent. and adding the other amount to it. Now you are dealing with exact figures, and you say that this is, as nearly as you can arrive at it, what it actually cost. If that is true and you have earth, clear, separate and apart from the others, why wouldn't that average be the fair average rather than the average of it all?

A. It would depend on the location of the line and the different conditions to contend with, my claim being that this statement, extending over a period from 1898 to 1907, shows averages which are very close to correct results, but that you cannot pick out individual lines and make deductions from them. You are liable to be astray either one way or the other.

Mr. Holden: Are you correct, Mr. Teal, in your analysis of the items where there is only earth, that there is very much less? I find in some of them there is more.

Mr. Teal: I am quite willing to have that shown.

Q. Let me ask you this, Mr. Hogeland: If we would take a series of items there of the earth, and the average cost per yard showed less than this other average that you have selected, would that be a fair result to arrive at? Would that be fair?

A. I don't understand that question.

Mr. Donnelly: You mean, do you not, Mr. Teal, that if the excess of the average cost per yard over the amount actually paid for the earthwork itself were less than is shown, would it then be a fair average?

Mr. Teal: Well, I think you are right.

Q. I will ask you a concrete case. The Morden line there, the very last item that you have, shows earth at 15 cents a cubic yard, does it not—the very last item on Exhibit 16?

A. Yes, sir.

Q. The total average cost per yard of the earth there, only earth being used, was 18-1/2 cents per cubic yard, was it not?

A. Yes, sir.

Q. Then, that cost 3-1/2 cents more, according to these figures, than the average contract price?

A. That is true.

Q. Now, in your sheet here, in getting up your reproduction cost you figured that at 31 cents—that earth? I mean on this original.

A. Yes, all of the earth work was figured at 31 cents.

Q. Now, I will go right to the top here. There is Thief River Falls to Greenbush, 16.4. Only earth was moved. The average cost per yard was 21.5. That made five cents?

A. Yes, sir, 5.1 cents.

Q. The next one, Mohall to Sherwood, the contract price was 13.1 and the average cost was 25.8.

A. Showing a difference of 12.7 cents.

Q. Yes. Now take the Towner line, which was 13.6, and the total cost 20.4.

A. Yes, sir; being a difference of 6.8 cents.

Q. The next one was 13.7 and 20.9.

A. Being a difference of 7.2 cents.

Q. The next one was 14.3 and 24.7.

A. Yes, sir, showing a different of 10.4 cents.

Q. The next one was 18.1 and 21.8.

A. Yes, sir, showing a difference of 3.7 cents.

Q. The next one was 15.7 and 19 cents.

A. Yes, sir, showing a difference of 3.3 cents.

Q. Now, my figures may be wrong, but as I added them up it made a difference of 6.8. Of course the figures will show for themselves, but my figures show a difference of 6.8 cents—an average difference between the average cost of the yard and the average contract price of 6.8 cents on the earth. Now, if this 19.3 is right, the contract price, and your 31 cents is right, that makes a difference as you have made it of 11.7? That is correct, is it?

A. It would take 11.7 cents to produce the 31?

Q. Yes.

A. Yes, sir.

Q. You think, then, that where you get a series of items in that way, showing earth work unconfused with anything else, that that does not show a nearer average result than where it is confused with others?

A. The lines you have selected, being the lines that show simply earth work, do not represent an average of the earth work to be moved on the system. Other light, largely North Dakota lines put in with scrapers on the side, did not require the shipment or the employment of large outfits, and were in every way the most economical construction that exists in the system. But the whole statement is made to show the entire construction undertaking carried out during that period. So that it includes these light lines as well as the heavier lines, and in that way the average is much safer than picking out any particular items.

Q. I may be mistaken, but I understood you to say, and that is the reason I asked you, if this statement did not represent or was not intended to represent the average cost of this kind of work on the Great Northern system, and you said it did.

A. It does.

Q. If my addition is correct, taking the first eleven items on earth on that exhibit, the total average price paid from

1898 to 1904 was 20.08 cents per cubic yard, and taking the last eleven items indiscriminately, which include that 36 cent contract, the average is 19-1/2 cents per cubic yard of earth. Therefore it would indicate to my mind that earth is not only being moved cheaper the last few years on your system than it was the first, but also that those figures which you have put in here fairly represent the system—that is, the work of moving earth on your system?

A. I don't follow you in your deductions there, Mr. Teal.

Q. You stated a while ago that you had advanced the difference between the average cost per yard, as shown by this sheet here, and the amount that you used when you got up your tabulation because you thought of later years that this work was costing more; that therefore, it was fair to add some small amount, did you not?

A. I offered that as an explanation as to why the corrected Exhibit 16 did not quite justify the prices I had used in Exhibit 15, except for the item of hard pan; but you should remember that I have testified that in making up Exhibit 15 I was not guided by the figures in Exhibit 16, but I did make up Exhibit 16 to show what grading had cost us during that period of years and from that to justify the figures which I had used.

Q. And you still think that throwing earth, hard pan, loose rock, solid rock together as you have here, figuring the prices as you have here, arriving at an average return as you have here, and then applying that average difference is fair to earth and to rock and to everything indiscriminately?

A. I believe it is.

Q. In building railroads nowadays, as compared with ten or twelve years ago, are there any improved methods or improved tools or appliances that enable you to move earth, rock, or anything else quicker and more economically than you used to?

A. The employment of steam shovels has to a larger extent in recent years than formerly enabled work to be carried out more expeditiously.

Q. Does it save anything in cost?

A. It does at the present time, because of the great difficulty in getting labor; but as compared with the methods in vogue a number of years ago when labor was of a better class and of a lower price it affects very little saving in dollars and cents in the construction cost.

Q. But as of today it does affect a considerable saving both in time and cost, does it not?

A. Yes, sir.

Q. Is the use of the steam shovel the only advance that has been made in this handling of material and the building of railroads?

A. No, there are other machines, but I mentioned the steam shovel as being the principal one.

Q. There has been an advance in the construction, an advance in the handling of these materials, the same as there has been in everything else, has there not—advances in every other line of work?

A. Yes, sir.

Q. You still believe, do you, Mr. Hogeland, that the Great Northern road could be constructed on the plan that you have laid out, through the country that you have laid it in, and the cities as they exist, and in the locations it is, and not pay anything above operating expenses for eight years? I say do you still believe that?

A. I still believe that if you attempt to reproduce it in a period of eight years as it exists today, that any revenue from commercial business would not be more than sufficient to pay operating expenses.

Q. You still believe that?

A. I still believe that, yes, sir.

Q. In looking up these figures and the preparation of them, did you happen to run across what the actual cost of any considerable portion of the work has been of that 56 per cent., I think you said, that came from the books, in your former testimony?

A. You are speaking now of the grading alone?

Q. Yes, the building of the road.

A. You refer to the grade?

Q. Yes, to the grading and the other work too.

Mr. Holden: What was the 56 per cent.? I don't remember.

Mr. Teal: I think it was 56 to 54 per cent., or something of that kind, that came from the books.

A. Yes, sir, I said that of the grading quantities 56 per cent. came from quantities as actually paid contractors.

Q. And you also stated that you did not use the figures that the books showed were actually paid?

A. That is right.

Q. Could you tell us today what the actual cost of this particular work was as compared with the figures you have made up.

A. No, sir, I cannot.

Q. Your books show that, don't they?

A. Yes, sir, they show that.

Q. There is no particular reason for not showing that, is there, that you know of?

A. No, but I do not think it would be of any particular value in reproduction.

Q. Is it more or less than your figures?

A. I can't tell you.

Q. You don't even know that?

A. I don't know it, no, sir.

Mr. Holden: Mr. Teal: Aren't you speaking of the subject matter of Exhibit 21, which Mr. Hogeland offered and which is entitled, Statement showing quantities moved by and prices paid to contractors for grading for which vouchers are on file? I don't want to leave any misunderstanding. It seems to me that is an exhibit from our books; so far as we have got records of the actual prices we have paid contractors for grading it seems to be for the lines in Minnesota, and to cover all of them, running back clear into the period of at least 1881.

Mr. Teal: No, what I referred to was this: Mr. Hogeland testified (he can correct me if I am wrong) that some place above 50 per cent. of the quantities of the grading was taken actually from the books, and I asked him if the prices he used were taken from the books showing the actual price. He stated that they were not, that that was not the way you get a reproduction cost. So that I thought possibly in going over these figures again he might have run across those figures and be willing to state where they were. So he says he does not know.

Mr. Holden: I think you and I are headed exactly towards the same point. I think the testimony already shows that the Great Northern has not got full records of the original cost of a great deal of their line. But I think Exhibit 21, so far as the line in Minnesota are concerned, is a statement of the actual cost paid for the four classes of excavation.

Mr. Teal: It may be, but I think Mr. Hogeland understood what I asked, and if he does not know it is all right.

The Witness: My understanding was that you referred to the quantities of grading amounting to about 56 per cent.—

Mr. Teal: Yes.

The Witness: —which I stated were taken from our books as having been paid to contractors; and my answer to that was that I didn't know what had been paid to contractors for that work, for that grading.

Q. Eliminating, then, the question of what you paid to con-

tractors, do you know what your books show the actual cost of that 56 per cent. was, what you actually paid?

A. No, I do not, and I feel very sure the books would not show it, but the books would show what was paid the contractors, and that I understood was your question.

Q. Well, it was, but I was not limiting it that way.

A. I understood it that way.

(Recess until 2 o'clock p. m.)

Afternoon Session.

November 22, 1909.

ALBERT H. HOGELAND, recalled:

By Mr. Walter:

Q. Mr. Hogeland, is it true that these corrections were all first suggested by the investigation made by the accountants for the Commission?

A. No. Some of them were suggested by the examination which Mr. Morgan had made.

Q. Yes, but none of them were made on your own initiative?

A. I think that most of them were made on our own initiative; but they were found, during the examination which we made in connection with the accountants of the Interstate Commerce Commission and Mr. Morgan.

Q. Well, either by Mr. Morgan or by the accountants working under his direction, inquiry was directed to you which caused you to make an investigation resulting in the changing of the figures?

A. Yes, sir; the further examination that was brought about in that way has resulted in these changes.

Q. Now, it is true, is it not, that the cost of labor and material on ballasting, on grading and excavating, varied as much between 1898 and 1907 as the cost of track-laying and surfacing?

A. The cost of labor, I think, varied about the same.

Q. Then, why was it that in track-laying and surfacing, in your Exhibit 19 corrected, you took as your unit price the average for the years 1904 to 1908, and did not make the correction on excavating, the earth work, rock work (loose and solid) and hardpan, but did on the track-laying and surfacing?

A. So far as the ballasting is concerned, it did not extend back as far as the track-laying and grading; and I therefore didn't consider it necessary to make a separation. So far as the grading is concerned, I felt that the more lines we could

get distributed over the various portions of the system, the more correct the average was likely to be.

Q. Did you take all the lines during that period—all the work done during those years?

A. All of the contract work.

Q. There was no other contract work on grading than that included in your Exhibit 16 Corrected?

A. Nothing of any magnitude. In other words, there may have been some short pieces of line which we have not included, but they would be very small.

Q. Ten miles?

A. Something of that kind I had in mind.

Q. You have some here four miles and a fraction, and seven miles. Why not include all?

A. Our intention was to include all; but there were some short pieces of line—on the Iron Range more particularly, mining spurs, which I think have not been included. But the intention was to include all of the contract work in those periods.

Q. In ballasting, you commenced in 1901?

A. Yes, sir.

Q. Why did you average from 1901 to 1908, instead of from 1904 to 1908, as you did in track-laying and surfacing?

A. That could have been done, but I don't think it would have given any more correct results, except possibly it would have increased the price per yard a little. That I did not try.

Q. It was not necessary to increase either the ballasting or the excavatig, because the figures as shown come very near those you have in 15; isn't that true?

A. That is true, and especially so for the ballasting.

Q. Well, as to track-laying and surfacing, it was not true, and it was necessary, in order to get your unit figure, to take only those years; isn't that so, Mr. Hogeland?

A. It was necessary to make a separation; not necessarily only those years.

Q. But it was necessary in order to get the unit price which you had used in Exhibit 15?

A. Yes, sir, it was necessary to correctly justify the prices I had used.

Q. And what you wanted to do was to make a table from actual figures, as nearly as you could, which would justify the unit price you had made in Exhibit 15?

A. I wanted to get what was correct; but it was made primarily with the object of justifying my figures.

Q. And Exhibit 15 was made prior to the investigation shown by Exhibits 16, 18 and 19?

A Yes, sir.

By Mr. Holden:

Q. Now, the inference of Mr. Walter's questions would seem to be that you had selected certain years, or perhaps certain pieces of work, for the purpose of forcing an average price here that would justify the price you used in your Exhibit 15 as your judgment as to what the cost of reproducing would be. I wish you would state again whether, in making up your Exhibit 16, you had any such purpose as that, in taking all the work for ten years; or, in fact, in either of the other two exhibits?

A. No, sir; there was no such purpose. The intention was to take the period as shown on those exhibits, and to include all of the contract work done.

Q. Then, if I understand you, you made up your figures, as shown on Exhibit 15, first; and you set out in that exhibit your judgment as to what (as of the present time, or, perhaps more accurately, as of approximately June 30, 1908) it would cost per yard for grading and rock of the different kinds—items of that character; then you had this computation shown on Exhibit 16 prepared, which aimed to take all of the grading work for ten years that had been done all over the system; and, when that computation was made, it worked out the figures that the original Exhibit 16 showed; and that result is the actual result of putting these together and dividing the total charges by the total yardage: is that a correct statement?

A. That is correct.

Q. So, as a result of those computations, there happened to turn out what is shown on the face of Exhibit 16?

A. Yes, sir, it does turn out as shown on that exhibit.

Q. And there was no selection of items or selection of pieces of work with any purpose of getting any anticipated result, or anything of that kind?

A. Not at all.

Q. Now, was there any selection or purpose in your mind of selecting any particular years or particular period of getting at a result in advance of what the computation showed?

A. No. I simply desired to go back far enough to make the statement what I considered a fair average for the entire system.

Q. The fact that you have taken a lesser range of years for the ballasting than you took for the grading or the tracklaying and surfacing—is it your impression that if you had gone to further effort and taken a longer period for the actual work of ballasting, it would have shown any less result than the figures shown on Exhibit 18?

A. No. And I should add that Exhibit 18 includes all of the ballasting done on the lines by contract, that are shown on

Exhibit 16. In other words, it is intended to have these three exhibits (16, 18 and 19) cover the same amount of construction. On a great many of the lines the ballasting was done by the railroad company itself, and was not done by contract.

Q. That brings out the point I had in mind—that the three exhibits deal harmoniously with the amount of work involved in the tables on Exhibits 16 and 19; that is to say, as to grading and track-laying; and the ballasting, Exhibit 18 deals with all of the ballasting that was done by contract on the thirty-seven lines or items of work embraced on Exhibit 16 and 19?

A. That is true.

Q. You say that there may have been some short pieces on the Iron Range that are not included in Exhibit 16 Corrected. You also said that it was aimed to include, however, all of the grading work that was done by the contract between 1898 and 1907 inclusive. Do you know whether there were any items up on the Iron Range omitted, or is that surmise?

A. Yes; there were, as I recall, a few short stretches of spurs leading into mines.

Q. From your knowledge of that class of work, is it fairly comparable to the average work that is done in grading?

A. It is rather more expensive work than the average of the system; so the prices as shown on Exhibit 16 would be increased rather than diminished, if they had been put in.

Q. Is that kind of work, running switches up into the Iron Range mines, fairly comparable with the average grading work on a system such as the Great Northern, or is it a special kind of work which is more expensive, ordinarily, than the average work?

A. Ordinarily it has been more expensive than the average.

Q. Now, this examination that has been made since we had our last hearing, by Mr. Morgan and these gentlemen who assisted him, selected by the Interstate Commerce Commisson, was participated in by your force down there; the work was all done in the Great Northern building here, was it not?

A. Yes; so far as the examination of the vouchers and construction books, I understand it was all done in the building.

Q. There was an interchange of information by your force and the force of the other side, wherever there was a point discovered by examining these vouchers, or where there was an error in your former figures, was there not?

A. So far as we know, our attention was called to all of them.

Q. And where your attention would be called by any of the examiners of the Commission to a case where there was probably an error, it resulted, at times, in increasing your figures, and also, at times, in reducing your figures?

A. Yes, sir; both ways.

Q. Mr. Teal directed your attention to eight items, I think, on Exhibit 16 Corrected, where the grading work seems only to have had to do with moving earth work. I have added up the total number of yards involved in those eight instances, and, unless I have made an error in my calculation, I find the total yards to be 2,383,984 out of a total cubic yards of earth of 28,693,523, and out of a total yardage, all told, of 47,278.121; so it would seem to be fairly inferable, would it not, that the amount of earth work done on those seven or eight lines was a very minor fraction of the total?

A. Yes, sir.

Q. I wish you would verify my figures, after you leave the stand, and, if I have made any error that amounts to anything, call my attention to it; and I would like to have these figures, then corrected. But I want to direct your attention to that result. I think, in your cross-examinaion, you were asked by Mr. Teal whether you had made any allowance in your estimated cost of reproduction, for work done by section men, or by company force of that character. As I understand you, you have not, in figuring the cost of reproduction, dealt at all with the question of who does the work, as between the contractor and the company; your total figures have taken into account the total quantities, as you understand it, and you have passed your judgment as to prices? Your figures have not covered the source from which the money would be derived to pay for the work. Am I right in that statement?

A. That is true.

By Mr. Teal:

Q. The figures that were referred to and added up by counsel, on earth work, are the only figures on there that refer to earth work alone, are they not?

A. I presume so.

Mr. Holden: That is my understanding. I made the computation.

Q. And assuming those to be the average of the contracts that were let, what difference would it make whether it was two million or twenty million of yards that you moved, as to what the average price would be?

A. Because, as I said this morning, those particular lines, are lines of light construction, where the work is practically all done from the side, with scraper teams, and the amount of extra work involved in the way of overhaul, transportation of outfits, men and supplies, and extra bills, are small compared with work of heavier construction.

Q. Any of it in Minnesota?

A. Yes, sir.

Q. What states is it in?

A. It is in Minnesota, North Dakota —

Mr. Holden: What portion of Minnesota?

The Witness: The northwestern part of Minnesota; in North Dakota and in Manitoba. And all of the lines are such as are graded by casting in or scraping in material from the side.

Q. Where does the Billings & Northern run?

A. That is in Montana.

Q. Now, as a matter of fact, across the State of Washington, in many places, for considerable distances; in Montana, for considerable distances; in Dakota for considerable distances, and in Minnesota for cosiderable distances, these remarks that you made respecting scraper work for grading apply, don't they?

A. Yes, sir, but not to the same extent as on these eight lines that are under consideration.

Q. Just one other thought on that, please. If I remember correctly (and if not, please correct me), the average contract price for handling earth per cubic yard was 19.3 cents. Now, as I understand it, that was not on estimates; that was the actual amount paid per yard; and the other represents the actual yardage. That is correct, isn't it?

A. That is correct.

Q. To that you add what amount, in cents, to reach the amount you used?

A. I didn't arrive at it that way.

Q. I say what amount do you add to reach 31 cents?

A. It would be necessary to add 11.7 cents.

Q. Could you say, offhand, what percentage of the contract price you pay out in what are termed extras—extra work, or whatever you choose to term it?

A. What is that question, please?

Q. I say what percentage (I thought maybe you could do it quicker than I could) on a contract of earth, according to your figures, would you pay out over and above the contract price?

A. Read the question again.

Mr. Holden: You mean what percentage of 11.7 would be—

Mr. Teal: Yes. About 60 per cent., isn't it?

Mr. Donnelly: You mean what percentage of 19.3 per cent. would 11.7 be?

Mr. Teal: Yes. I thought I made it plain. You all understood it, so I must have made it plain.

The Witness: I didn't understand it that way. It would be between fifty and sixty per cent.

Q. Then I would like to ask (as you are testifying as an

expert) if in your opinion, where contracts are let for grading and the quantities are absolutely ascertained, the amount you pay in excess of the contract will average between 50 and 60 per cent.?

A. You are speaking about earth work altogether?

Q. Yes, sir.

A. Yes, sir. That has been our experience.

Q. Now I want to ask you this: when you say that has been your experience, what do you mean? that with all of your experience as an engineer, on a contract on earth work you pay 50 to 60 per cent. more than the contract price for that excavation?

A. I say that the actual cost of the work, after all of the items which are not assumed by the contractor are figured in,—that it amounts to between 50 and 60 per cent.

Q. I wish you would state what those items are.

A. Those items are overhauls—

The Master: What do you mean by that?

Mr. Teal: And the amount you allow for overhaul.

The Witness: That is what is paid to the contractor, over and above the contract price; which covers the hauling of the materials a certain distance, generally one thousand feet. That is, the contract is let at so much per yard, based on hauling the materials a certain distance; and any hauling of the material beyond that distance constitutes an overhaul.

Q. What do you pay for that?

A. That varies.

Q. What would be the average that you pay for that?

A. Generally one cent per cubic yard per one hundred feet.

Q. Have you any idea, with all your experience, how much this overhaul averages?

A. For all classes of material?

Q. Yes.

A. About four cents a yard.

Q. The overhaul, then, will average over twenty per cent. of the contract price?

A. On all classes of material probably not so much as that.

Q. No, I don't think so either, and I am not an engineer.

A. The four cents a yard would not be twenty per cent. of all classes of material.

Q. Well, confine it to this earth here; that is what we are talking about now.

A. That is practically our experience on all portions of the system.

Q. That the overhaul will amount to over twenty per cent.

of the contract price for the excavation of the material, on earth work?

A. No, I didn't say that; amounts to about four cents a yard.

Q. Well, your contract price is 19.3 cents.

Mr. Donnelly: Earth work.

Mr. Teal: I am speaking of earth work.

Mr. Dillard: He is speaking of all work.

Q. Well, we will get back to earth work now. I don't know why the overhaul should be so much more than the other, but I don't care, I am speaking of earth work.

A. It probably would not be quite so much on earth as on other classes of material. But, taking all classes of material, that has been our experience.

Q. Now, you have figures, haven't you, that would prove that? absolute figures in your office, showing your overhaul, on a series of contracts?

A. We have, on a series of contracts; but that does not take into account all of the work which has afterwards been done by the railroad company, in the way of widening cuts and widening fills, or filling bridges, all of which material, if done during the original construction, would make the overhaul run up higher than it did on the contract work.

Q. Well, let us talk about the same thing. As I understand it, this is a series of contracts that you have let at certain prices, and then the average cost runs a certain amount per yard on those contracts; is that correct?

A. Yes, sir.

Q. Isn't that what this purports to be?

A. Yes, sir.

Q. That is what I am talking about. We are not talking about the after work now. You have in your office, have you not, contracts with a number of different people in these different states, in which the overhaul that you have paid actually shows in the contract?

A. Yes, sir.

Q. Will you this afternoon submit those contracts for examination to ascertain how much this overhaul is that you have actually paid?

A. The contracts would not show how much had been paid. It would be necessary to go to the vouchers to determine that.

Q. Very well. Will you submit those vouchers for examination this afternoon, to find out what has actually been paid for overhaul?

A. That could not very well be done; but someone could examine them.

Q. Why couldn't it be done?

A Because there are so many of them.

Q. I don't care to see hundreds of them.

Mr. Holden: You say "this afternoon." We will give you anything we have. If you or Mr. Morgan will select a particular line, we will have them gone over.

Mr. Teal: I will go further than that. I will let Mr. Hogeland select his own line.

The Witness: I think I have it for all of those lines, there, if you will let me refer to some of my papers that I have here.

Mr. Holden: We will have to have the necessary time. It could not be done in an hour, or anything like that.

The Witness: I have that drawn off, but I haven't it here.

Q. You have it drawn off?

A. Yes, sir.

Q. Then there would be no objection and no difficulty in having that examined this afternoon, and having the vouchers and the contracts that go with them, so as to show that that is the overhaul charge?

A. No objection, except that we could not very well bring the vouchers up here.

Q. No, but I say we could have them examined so that could be introduced.

A. Yes, sir.

Q. I would like to have that. Now, that accounts for four cents of it. What is the rest of the eleven cents?

A. My recollection is that about three cents is covered by transportation of outfits, men and supplies, and about three cents by extra bills.

Q. Let us take up the first three cents—

A. This statement that I will show you or present, will cover all of those items.

Q. You have the vouchers for this three cents that you have paid out for transportation, have you?

A. No, we haven't the vouchers for that. That would be the charges, as I have explained to you, which have been made for transportation.

Q. Then that three cents is simply an arbitrary charge is it?

A. It is the transportation charge.

Q. How did you arrive at it?

A. It is what has been charged for the transportation of outfiets, men and materials, used by the contractors in the grading.

Q. That is at full passenger rates and full freight rates; is that correct?

A. My understanding is that it is tariff rate.

Q. Has the Great Northern any tariffs on file with the Interstate Commerce Commission for the hauling of contractors' outfits?

A. I can't tell you as to that.

Q. Or for rates of that kind at all?

A. I can't tell you.

Q. And of course you don't know if the Northern Pacific has any?

A. No, sir.

Q. Do you know whether there are such tariffs allowed to be filed?

A. No, I can't tell you.

Q. So you didn't look up to see whether you had tariffs of your own covering that sort of movement, that are on file with the Interstate Commerce Commission?

A. No, sir.

Q. Now, what was the other three cents for?

A. For extra bills, not covered by the contract price per yard.

Q. Three and three are six, and four are ten cents. Where does the other come in?

A. I was giving them to you in round figures, figuring the difference was about ten cents.

Q. And you still think, in fact you know, that on a contract for earth work, the extras that you have defined will run 60 per cent., or thereabouts (whatever it may be) over and above the contract price?

A. Yes, sir, between 50 and 60 per cent.

Q. And that is your experience as an engineer, on railroad construction?

A. Yes, sir.

By Mr. Walter:

Q. On Exhibit 16 as corrected, you made about half a dozen changes in the column headed "Earth," didn't you, that is, cubic yards?

A. Yes, sir.

Q. And hard pan, how many?

A. Three.

Q. And loose rock?

A. Three.

Q. And "Total Yardage"?

A. Six.

Q. You didn't tell us the number of changes made in the

column headed "Total Charges." Every one of them is changed, isn't it?

A. All but four, I believe.

Q. Yes—out of about thirty-five or thirty-seven?

A. Yes, sir, I believe that is right.

Q. In your Table 15 you use $900 for track-laying and surfacing?

A. Yes, sir.

Q. And in your Table 19 tracking-laying and surfacing, you averaged during the entire period, didn't you, 1898 to 1908?

A. I don't understand what you mean by that.

Q. You averaged the cost from the year 1898 to the year 1908, inclusive, on those lines?

A. Yes, sir.

Q. And you made no division of the periods before 1904 and since 1904?

A. Not in the original Exhibit 19, no.

By Mr. Holden:

Q. Mr. Walter asked you a question why you didn't state the changes in the column of total charges. You only stated such changes, in all of these figures, as I called your attention to; and those, as my questions were framed, were for the purpose of illustrating; but the difference will appear by comparison of original Exhibit 16 and Exhibit 16 Corrected—both being in the case now?

A. Yes. My understanding was we simply explained enough of that to show the nature of the changes; the principal thing to be borne in mind being that whatever changes were found to be necessary on that critical examination of the vouchers to make the total charges agree with or cover the total contract yardage, we made.

Q. Now, directing your attention to the fourth item on Exhibit 16 Corrected (Jennings to Boundary Line), the average contract price shown in original Exhibit 16 was 31 cents; and after the further examination it was shown to be 30.8 cents. There was a change then made necessary as the result of this examination, in the total charges, which will be ascertained by comparing the item on each of the Exhibits 16, and that brought about a change in the average cost per yard, from 49.1 cents in original Exhibit 16, to 58.8 cents (as it now appears) in Exhibit 16 Corrected; so that there is an instance where the difference between the average contract price and the average total cost per yard is considerably in excess of the 10.5 cents which you say is the average increase over the contract price, the difference there being,

as I roughly estimate it, 28 cents. Am I corrected about that?

A. Yes, sir.

Q. Now, is it a fact that as a result of these various revisions of these figures, in some cases the difference between the average contract price and the total average cost per yard is in excess of the average difference of 10.5 cents?

A. Certainly. Some are very much in excess, and some are lower. It would not be fair to take either one or the other. In order to arrive at any results that will correctly show an average, you must spread it over as large a period, and over as much of the system, as is possible.

By Mr. Donnelly:

Q. The mistakes that were deducted, then, as I understand it, actually worked both ways; that is to say, some of them resulted in showing that the difference between the average contract price and the average cost per yard was even greater than you had at first supposed it to be—and that is an instance of it?

A. Yes, sir, that is true.

Q. Some of the errors, then, resulted in a reduction of that difference, and some of them in an increase?

A. That is true.

By Mr. Walter:

Q. Is the column headed "Total Yardage" the entire amount of earth, loose rock, solid rock and hard pan moved on the line, Cloquet to Boylston, Deer River to Fosston?

A. Moved by contract.

Q. What about that moved by yourself?

A. That does not appear.

Q. Is it taken care of at all, in the charges?

A. Not in the charges shown in Exhibit 16 Corrected.

Q. Do you know what proportion of that you moved yourself—what proportion of the yardage on that line was moved by the Great Northern?

A. No, I cannot tell you how much additional yardage was moved by the company.

Q. And you don't know how much it cost you?

A. No, sir.

Q. So that the total charges there, or the average cost per yard, does not represent the true cost per yard of all that was moved on that line, by everybody?

A. No; it represents the cost of materials moved by the contractors.

Q. And that may be a large or small proportion of the total amount moved? You don't know?

A. It is a large proportion.

Q. You don't know how large?

A. I don't know the exact percentage, but it is a large proportion.

Q. That is true as to all those other lines mentioned there?

A. It is not true of all of them. Some of the lines have had, and did have, additional work done by the railway company itself, after the contract was let but not all of them.

Q. But you can't tell in which ones the work was all done by the contractor and none by the railroad?

A. Not positively now.

By Mr. Teal:

Q. Were you ever with the St. Paul, Minneapolis & Manitoba before the Great Northern acquired it?

A. Yes, sir.

Q. When were you with them?

A. I came with the original St. Paul & Pacific in 1879, and then from 1880 to 1884, I was with the Northern Pacific; so that from 1885 to the present time I have been with either the Manitoba or the Great Northern.

Q. Do you recollect the mileage operated by the Manitoba when you were first with them, in 1879, about?

A. At that time it was called the St. Paul & Pacific.

Q. Yes.

A. It had about six hundred miles.

Q. How much mileage did they have afterwards, the second time, you went, I mean; in 1885?

A. I can't say positively, but I should say about eighteen hundred miles.

Q. Can you state whether or not during that entire time that road was paying dividends?

A. No, I can't say.

Q. You don't know when the first dividend was paid?

A. No, sir; I do not.

Q. Do you remember whether in 1885 it was a profitable road, more than paying expenses?

A. It is my understanding it was.

WILLIAM G. JOHNSON, recalled, testified as follows:

Cross-Examination by Mr. Teal.

Q. In this case, as I have it marked, there is a statement marked Johnson No. 22, showing income and disposition of the same of the Northern Pacific Railway Company for the period of eleven years and ten months, between September 1, 1896, and June 3, 1908.

A. Yes, sir.

Q. And I want to say that is one of the best statements I

ever saw. Now, can you not prepare a statement for this year, for the year ending June 30, 1909, so as to bring this statement down to date, showing just the same facts in connection with the income and expenditures of the Northern Pacific Railway Company as is shown by this table?

A. Yes, sir.

Q. And will you do it, Mr. Johnson?

A. I certainly will.

Mr. Donnelly: That means simply to add that additional year to it?

Mr. Teal: Yes; that is so as to bring it down to June 30, 1909, because it is a very clear statement of the thing.

Q. What position do you occupy with the company, Mr. Johnson?

A. Assistant comptroller.

Q. What books are under your charge and supervision?

A. Almost everything in the accounting line, as second officer of the accounting department.

Q. Was the land grant of the Northern Pacific a part of the property that was turned over at the time of the reorganization and represented by its capital stock and bonds at that time?

A. Yes, sir.

Q. The books that are under your charge show the amount of lands that came into the possession of the Northern Pacific Railway Company, at that time, do they not?

A. Yes, sir, that is to say, not our books but the books of the land department.

Q. I mean, of course, that are under your control.

A. Well, not directly Mr. Teal.

Q. They are so that you can ascertain, are they not?

A. Yes, sir.

Q. You could also ascertain exactly the amount of money that has been received from the sale of lands since that date, can you not?

A. Yes, sir.

Q. What becomes of the money that is received from the sale of lands of the Northern Pacific Railway Company?

A. It depends as to which grant the money comes from. Generally speaking, though, it is paid over to the trustee of either one or the other mortgage.

Q. Then, it inures to the trustee of one or the other of the mortgages representing part of the capital indebtedness of the Northern Pacific Railway Company?

A. Yes, sir; either the Northern Pacific or mortgage indebtedness assumed.

Q. And as that is sold and paid off, to that extent it reduces the capital indebtedness of the company, does it not?

A. Yes, sir, naturally.

Q. I would like to have a statement filed in this case (if it can be done without much trouble, and I guess it can) showing the acreage of land which came into the possession of the new company, the amount of that land that has been sold and the application of the proceeds of the sales.

A. By proceeds, let me have it clear that you mean net proceeds after paying the expenses of administration?

Q. Yes.

A. I think it is all stated in the annual report. I think it shows there plainly.

Q. I thought if you could make as good a one as the other it would save a whole lot of trouble.

A. All right, sir.

Q. After the reorganization was not the North Western Improvement Company incorporated?

A. I believe it was after the reorganization. I am not sure after that though.

Q. You could ascertain that fact definitely, could you not?

A. I presume it can be ascertained from the records of the company.

Q. That is what I mean. Those are in the office of the company here, are they not?

A. Not in the accounting department.

Mr. Teal: I was trying to save trouble. If Mr. Donnelly does not want you to get it, he can ask somebody else to get it.

Mr. Donnelly: It is available, of course. I don't know just how much Mr. Johnson knows about it.

Mr. Teal: He will not say what he does not know, but I mean if Mr. Johnson says he will get it he will get it, and that is what I was getting at.

Mr. Donnelly: Yes, all the information that is available.

The Witness: Do I understand you want the articles of incorporation, or the date it was incorporated?

Mr. Teal: No, the date it was incorporated.

Q. If I understand it correctly, there was transferred to this company certain coal lands and certain lands not used for railway purposes; in fact, if I understood Mr. Cooper correctly, he said that substantially all property, excepting that used for railway purposes was transferred to this company. I refer now to the North Western Improvement Company. Do you know as to that?

A. Those were matters that did not come under the supervision of the accounting department, and I am therefore unable to say either yes or no to that.

Mr. Teal: Mr. Donnelly, that is a fact which I would like to ascertain.

Mr. Donnelly: I am satisfied that it is not a fact.

Mr. Teal: I say the facts about it I would like to ascertain.

Mr. Donnelly: Probably Mr. Cooper would know more about it than anybody.

Mr. Teal: What I desire to know is this: I desire to know the facts as to the creation of this company and the amount of property that was acquired by the Northern Pacific Railroad Company at the time of its organization, that was transferred to this company, and approximately its value.

Mr. Donnelly: Of course this is true as regards the land grant, Mr. Teal; that it is still in process of determination just what the grant is. Nobody could say within thousands of acres how much land came over to the Northern Pacific at the time of the reorganization or how much it owns now, because the contests are constantly going on in the department.

Mr. Teal: That I understand, Mr. Donnelly, but it can be gotten closely enough for me; and the fact that there may be some uncertainties as to the title of some of the lands would not prevent the fact from being stated as to how much property was transferred to the North Western Improvement Company and how that is represented in the shape of stock and bonds.

Mr. Donnelly: I think Mr. Cooper can give you more information on the subject than any other individual: If you yaut to have him come here, he will come.

Mr. Teal: Yes, I would like to. I assumed Mr. Johnson could, because I find these treasury securities and other matters referred to in the annual report, and I suppose that all such sheets as the general balance sheet and matters of that kind went out under the supervision of his office.

Mr. Donnelly: I have no doubt they do.

The Witness: They are made under our supervision, Mr. Teal, but we do not always gather together the facts which form the basis for these entries; they are furnished us by other departments. That is a matter, I think, that more properly comes under the notice of the Land Commissioner.

Mr. Teal: It may be. I was simply trying to get at it in this way, because I assume that being in there in the way it is and coming out of the accounting department, they would know, and I think it is of great importance to have those facts ascertained.

Q. I notice that there is an item here, Northern Pacific one-half interest in the Spokane, Portland & Seattle Railway

under construction, in round numbers $27,805,000, which purports to represent the actual advances of the Northern Pacific Railway towards the building of that road, April 12, 1909. Did your office furnish the figures for that item, Mr. Johnson?

A. Pardon me a moment. May I look at the annual report?

Q. Certainly.

A. Knowing that there has been more than $50,000,000 spent on that line I can only assume that these figures were furnished by us to whoever made up that statement.

Q. Do you remember what lines that covers—that is, under the head of S. P. & S.

A. It covers what is known as the S. P. & S. proper, that is to say, from Spokane to Portland; it includes a small navigation line on the Columbia River; a line running from near The Dalles, I think, called the Columbia River & Northern Railway and the Astoria & Columbia River Raliroad Company. I think that is all.

Q. And also the line up the Snake River?

A. That is included in the line from Spokane to Portland.

Q. The Astoria & Columbia River Railroad is a separate organization, is it not?

A. I believe it is, yes, sir.

Q. And this Columbia & Northern Railway is a separate organization?

A. I believe that is a separate corporation, yes, sir.

Q. And nowhere in your reports does there appear the earnings of any of these roads in the Northern Pacific?

A. No, sir.

Q. Their accounts are kept entirely separate and distinct?

A. Absolutely.

Q. And this is simply in the nature of an advance to these roads from the Northern Pacific?

A. Yes, sir; cash advanced for the purpose of paying the construction outlay.

Q. So that if that money were repaid to you, today on your books it stands simply as a loan, does it not?

A. As an advance.

Q. As an advance to this company?

A. Yes, sir.

Q. So that if that were repaid to you, it would have no part in this reconstructive cost of the Northern Pacific, would it?

A. Not unless you would consider the one-half mileage of the Spokane, Portland & Seattle Railway Company.

Q. Why do you consider it that way?

A. As I did not make up that statement I don't see why I should be called on to explain that. I did not prepare the figures.

Q. What different relation exists between the Northern Pacific Railroad and that road than its relation ot the Burlington?

A. In the case of the S., P. & S. the Northern Pacific has actually advanced the money to provide for its fifty per cent. ownership of that property. In the case of the Burlington, as I understand it, it is only a guarantee on the bonds issued in the acquisition of the stock of that company.

Q. And who owns the stock of the Burlington?

A. Well, I could only assume that it is held in trust as against the bonds.

Q. I understand that, but who owns the stock?

A. The Northern Pacific and the Great Northern, as I understand it,—not entirely but the majority of it.

Q. They own substantially one-half each, don't they?

A. Yes, sir.

Q. Excepting a few shares. In other words in one instance they used their credit and borrowed the money, using that stock then as collateral for the acquisition of substantially one-half ownership in the Burlington?

A. That is as I understand it.

Q. In the other instance they loaned the money directly for substantially one-half interest in the other company.

A. They advanced it for the purpose of constructing the railroad, yes, sir.

Q. You were with the Northern Pacific Railway Company, were you, when the Seattle, Lake Shore & Eastsern Railway Company existed, running out of Seattle?

A. I was in the employ of the Northern Pacific, yes, sir.

Q. Do you know anything of the acquisition of that property by the Northern Pacific, as to what it cost?

A. No, sir, except what the books of the company show.

Q. The books show that the cost of the securities for the acquisition of that property was $4,433,713.31. Do you suppose it would be possible to have a statement made by your engineer and by your land department showing what that piece of property is now valued at, the value that is put in here to the court?

A. I don't think I can answer for the other people.

Q. You would not know as to that?

A. No, sir.

Q. You don't know as to what extent the terminals of the

present Northern Pacific Railway Company were acquired through the acquisition of that company?

A. I do not.

Mr. Holden: The terminals, where, Mr. Teal?

Mr. Teal: At Seattle.

Q. There were a number of other properties acquired since 1898, since the reorganization by the Northern Pacific. You would not be able to determine how much those properties are now valued at, would you?

A. No, sir.

By Mr. Walter:

Q. At the time of the reorganization how much was paid for the property taken by the Northern Pacific Railway Company, a new corporation?

A. Taken from whom?

Q. At the time of the reorganization, when the Northern Pacific Railway Company was organized, when the last organization took place.

A. Those matters were all handled by the reorganization committee or, rather, the reorganization managers for the reorganization committee, and I have no personal information on that point.

Q. Do you know what the property was worth at that time —the value?

A. No, sir.

By Mr. Teal:

Q. Do you know what the stock of the Northern Pacific Railway Company was worth on the market, in 1897, 1898, 1899, or thereabouts?

A. I don't remember those figures offhand.

Q. Very much less than par though, was it not?

A. I believe, according to my best recollection, it was less than par.

By Mr. Donnelly:

Q. Has the S., P. & S. yielded any earnings up to the present time?

A. I could not answer that question, because the operating accounts are not kept in St. Paul; they are kept in Portland, Oregon, and we have here only knowledge as to construction matters.

Q. Mr. Teal contrasted the ownership of that line by the Northern Pacific and Great Northern with their ownership of the Burlington. In point of fact the S., P. & S. was actually constructed by those two lines, was it not?

A. Yes, sir.

Q. That of course was not true to the Burlington?

A. No, that was not true of the Burlington.

Q. Was there any special reason for its construction, in the way of congestion on the western end of the Northern Pacific, at the time it was built?

A. As I understand it, the congestion through the Cascade tunnel was such during the years 1906 and 1907 that the company was obliged to seek another outlet for its traffic to and from the coast.

Q. And in doing that this North Bank or S., P. & S. line was built?

A. Yes, sir, that is as I understand it.

By Mr. Teal:

Q. But, Mr. Johnson, what is the difference between buying a suit ready made and having it made by a tailor? You buy it in either event, don't you?

A. Yes, sir.

Q. So if you buy the stock of the Burlington that is already built, or put up the money to build another road, what is the difference as a business proposition? I mean what is the distinction you draw?

Mr. Donnelly: Nobody is undertaking to draw any distinction.

Mr. Teal: I gathered you were from the questions you were asking him.

Q. Let me ask you another question. You say it was built to relieve the congestion. As you understand it, the Northern Pacific as then built could not handle the traffic; is that correct?

A. That is as I understand it; it could not handle it satisfactorily.

Q. That is what I mean. It was absolutely necessary to have some other outlet to handle their busniess?

A. Yes, sir.

Q. That is, that they were up to the maximum as they were then built?

A. Yes, sir; owing to the Cascade tunnel principally.

Q. What was the object in buying the Burlington?

A. That deal I had nothing to do with.

Q. What did you have to do with this other deal?

A. Nothing at all.

Q. You had just as much to do with one as with the other, hadn't you?

A. Entirely.

Q. And you know as much about one as you do about the other, don't you?

A. No; I think I know a little more about the S., P. & S.

Q. You know that the congestion of the traffic out there required another road?

A. Yes, sir.

By Mr. Dillard:

Q. Doesn't the S., P. & S. serve the Great Northern and the Northern Pacific just exactly in the same way as if it were operated by them?

A. Yes, sir.

Q. On the congestion?

A. Yes, sir.

Q. Doesn't the Burlington bear the connection to those of something merely in the nature of a connecting line and an independently operated property?

A. Yes, sir, it does.

By Mr. Walter:

Q. The S., P. & S. is operated just as independently as is the Burlington, isn't it?

A. Yes, sir, it is—just as independent.

Mr. Teal: I would say that if you did not say so you would have trouble.

An adjournment was then taken until the morning of Tuesday, November 23, 1909, ten o'clock.

Room 326, Federal Building, St. Paul, Minn.,
November 23, 1909, 10 A. M.

The hearing was resumed before the special master, Hon. Frederick N. Dickson, at the above time and place.

Present: On behalf of the complainants, Mr. Hale Holden, Mr. Charles Donnelly, Mr. F. C. Dillard.

On behalf of the defendant, Mr. Luther M. Walter, Mr. W. A. Wimbish, Mr. J. N. Teal.

ALBERT H. HOGELAND, recalled on behalf of complainants, testified as follows:

Examined by Mr. Holden.

Q. Mr. Hogeland, when you were on the stand yesterday you were asked to state from memory your recollection of the approximate division of the item of 10½ cents which is shown on Exhibit 16 corrected as the difference between the average

contract price for the grading work on the lines during the period of ten years shown on the exhibit, and the average cost per yard. Since you gave your testimony have you given the matter further consideration and do you desire now to make any correction of the statement you made yesterday in giving the items of which that 10½ cents was made up?

A. Yes. I find in giving answers to Mr. Teal's questions as to how much of that increase cost was due to overhaul, extra bills and transportation charges that my memory was wrong. On returning to the office and getting the statement which had already been prepared I find the figures are as follows: The total amount paid contractors under their per yard price as shown on Exhibit 16 corrected is $15,903,754.78, being an average of 33.6 cents per yard. The total amount of the cost of over haul is $1,017,708.41, being an average of 2.2 cents per cubic yard. The total amount of extra bills is $290,994.35, being an average of .6 cents per yard. The total amount of freight and transportation charges is $3,620,022.89, being an average of 7.7 cents per cubic yard. The total charges being $20,832,480.43, or an average of 44.1 cents per cubic yard.

Q. The amount of extra bills there is but $290,000 out of a total of 20 millions and odd. Have you any statement to make as to whether or not that is the full item which probably constitutes the extra bills on that work, or not?

A. I think the extra bills were really larger than that, but in order to have no doubt but what every extra bill which we included referred to the yardage as moved by the contractors we have cut out a great many extra bills which in my opinion really belong to that yardage, but we could not identify it closely enough to be safe in putting it in to have a strictly correct statement.

Q. If, in your judgment, there should be a considerable amount of additional money spent on account of extra bills, which has been eliminated for the reason that you state, how does that work—against the interests of the company or in its favor—in the statement you have prepared, marked Exhibit 16 corrected, in showing the average price per yard?

A. It tends to reduce the average cost per yard as shown on Exhibit 16 corrected, which makes the difference between the average contract price and the average cost per yard a trifle less than what I believe it should be.

Q. The underlying purpose in that exhibit is to have so far as possible no question but that the money shown under the column of "total charges" in every instance applies to the

yardage shown under the column of total yardage moved by the contractor?

A. That is true.

Q. And wherever there has been any doubt on the subject in the matter of an extra bill or anything of that kind, according to your best judgment and understanding the doubt has been resolved in the way of cutting the charges out from the amount shown under the column of "total charges?"

A. That is true.

Cross-Examination.

Q. Mr. Hogeland, did you make a mistake yesterday in saying that it cost 4 cents a cubic yard for over haul?

A. Yes, sir; I gave you that from my memory and I evidently had in mind the figures which had been prepared for the Minnesota lines alone.

Q. Didn't you say yesterday that the result of this 4 cents was that was practically our experience on all portions of the system, in answer to a question that I asked you?

A. I believe I said something to that effect.

Q. Now that is not a fact, is it? That is not your experience is it?

A. That was too high a figure for the over haul for this Exhibit 16.

Q. Let us get back to the question you were asked. Is it a fact that your over haul averages 4 cents over the whole system?

A. No, sir, that is not the fact.

Q. Will you let me have those exhibits a moment?

The witness hands papers to Mr. Teal.

Q. Now, Mr. Hogeland, are you just as sure that this over haul by your books is 2.2 cents per yard as you were yesterday that it was 4 cents?

A. What is that question?

Q. I say are you just as sure today, this morning, that you are now right and that this over haul averages as much as 2.2 cents per yard as you were yesterday that it was 4 cents?

Mr. Holden: Mr. Teal, that is a mathematical computation on the paper.

A. What I gave you yesterday was from my memory. I gave you from my memory and my memory was wrong. Immediately on returning to my office I got the calculations

which had been made, and have given them to you this morning.

Q. Did you make these calculations?

A. No, they were made under my direction.

Q. To what extent were they made under your direction?

A. They were all made under my direction.

Q. What do you mean by under your direction?

A. By men working under my direction.

Q. It was simply your clerks' work?

A. Yes, sir.

Q. You do not mean to say that you checked over all these figures, do you, Mr. Hogeland?

A. I could not possibly do that.

Q. That is what I understood. So when you say now that this is 2.2 cents per yard, you mean that is the result of figures that have been handed to you by your clerks?

A. Yes, sir, but I have every reason to believe they are correct.

Q. Now I will ask you this: if on your entire system as an engineer you are willing to say as your opinion as an expert, under oath, that it costs you 2.2 cents per cubic yard for over haul on dirt?

A. I should say that is a very conservative figure.

Q. If your books show that that is not the case, then what would you say—your own books?

Mr. Dillard: What do you mean by his books?

Mr. Teal: His accounts and vouchers.

A. The vouchers would only show the contract work. Work which has been done by the railway company since, in the way of bank widening, bridge filling, grade changes, would not show any contract work.

Q. Have you no accounts there that show what you pay for over haul?

A. As done by the railway company?

Q. As done by anybody?

A. We have whatever is done by the contractors but not what is done by the railway company.

Q. How did you arrive at this 2.2?

A. That is all contract work on Exhibit 16.

Q. Very well, then, you say that would show under this contract work. Your books show it under that, do they?

A. That 2.2 cents?

Q. Yes?

A. Yes, sir.

Q. Now this freight and transportation is now 7.7 cents

per yard—for transportation, for freight on graders' outfit and transportation of men engaged in grading. That is what that is for, isn't it?

A. Yes, sir. You should include supplies furnished contractors.

Q. And supplies furnished contractors?

A. Yes.

Q. Now, I find, on figuring up the amount of yardage which you say is in this system, that the amount of freight paid for these purposes under this 7.7 cents would be $16,820,881. Do you think it amounts to any such sum as that, actually?

A. In a reproduction estimate it would amount to that, yes, sir.

Q. Do you think it amounts to any such sum as that actually?

A. What do you mean?

Q. Actually expended, as shown by your books?

A. The way the railroad has been constructed?

Q. Yes.

A. No, sir, I don't think it amounts to that.

Q. Do you think it amounts to anything like that at all?

A. I couldn't say whether it amounts to anything like it.

Mr. Holden: You mean the actual amount expended on account of transporting the men, material and supplies from the time the system began down to the present time? Is that the purpose of your question?

Mr. Teal: No, sir, my question is this: I want to know from the witness, who is an expert and testifying as such, whether he believes as an engineer from his experience, that the freight paid for the purposes indicated would amount to $16,820,881.

Mr. Holden: Do you mean on a reproduction of the system or the freight actually paid during the building of the system? That is where your question is not clear. Which do you mean?

Mr. Teal: I mean under any system that an engineer would use in building a road.

A. In the reproduction of the system—

Q. Now, I don't want to interrupt you, but I would like to have you answer that question.

A. I do, in a reproduction of the system, within the time taken to reproduce it.

Q. You believe that?

A. I do.

Q. Now, do you believe that that would be paid in freight for that amount of material on any road actually built, as they are built?

A. In proportion to the mileage do you mean, Mr. Teal?

Q. On that amount of stuff, that amount of material; that there is any such percentage as that, in other words, paid in actual practice in the building of a railroad.

A. Yes, sir, I do.

Q. So you think those figures are correct?

A. What have you reference to?

Q. The figures on freight.

A. As given to you this morning?

Q. Yes, sir.

A. Yes, sir, I believe they are.

Q. Where did those figures come from?

A. In the same way.

Q. What is the "same way?"

A. Produced by men working under me, taken from the vouchers and the statements which enter into the total figures shown on Exhibit 16 corrected.

Q. So that there will be no mistake about that: I understand now that these figures on freight come from vouchers that are on file in the office of your company?

A. They came from vouchers or statements or ledgers and books on file in the accounting department of the company.

Q. Either vouchers or bona fide book entries?

A. Yes, sir, or statements.

Q. What do you mean by "statements?" That is what I am getting at?

A. Statements showing the amount of transportation which had been furnished for each piece of construction.

Q. Then, they are bona fide book entries?

A. Yes, but I wanted to have that broad enough so that it would cover whatever way the information is found.

Q. And these entries, as you understand, were made at the time the work was done?

A. That is my understanding.

Q. In all these cases?

A. That is my understanding.

Q. Over the entire system?

A. Yes, sir.

Mr. Dillard: You are speaking now of mileage and not of charges, are you, Mr. Hogeland?

The Witness: I am speaking of this Exhibit 16, which I suppose he had reference to.

Mr. Holden: You are not referring to the computation you made of $16,000,000; you are referring, I take it, to the $3,000,000 of freight charges, testified to this morning?

Mr. Teal: Yes, commencing back here in 1898.

The Witness: I understood it referred to Exhibit 16.

Q. Now, at what rate was this freight charged?

A. My understanding is, as I said yesterday, it is the same rate as would be charged to any other company, which is the tariff rate.

Q. You don't know how much per ton per mile?

A. No, I can't tell you.

Q. If it is regular rates, there is a very considerable profit in it, is there not?

A. There would be over a completed railroad but there would not be in a reconstruction.

Q. Now, you have some charges in some of these exhibits for train service. What did you charge for the use of cars, in getting up these exhibits? What did you charge for a box car?

A. We took the train service as it was shown in the construction books.

Q. What did it show?

A. I can't tell you. We didn't charge a rental for equipment.

Mr. Holden: That is explained in the note at the foot of Exhibit 18.

The Witness: Exhibits 18 and 19 both have a note at the bottom to that effect.

Q. Now, for these train service charges: on what basis was that made?

A. My understanding is cost of train men's wages, fuel, oil, supplies furnished the trains engaged in that service.

Q. And how much for the cars?

A. No rental for equipment was put in.

Q. None at all?

A. No, sir; nothing for the use of the cars; that is my understanding. Wherever we found it we cut it out.

Q. Now, to come down to this dirt proposition. The price that you used was 31 cents per cubic yard?

A. Yes, sir.

Q. Under this exhibit the contract price was 19.3 cents.

A. For earth, in Exhibit 16?

Q. Yes.

A. Yes, sir.

Q. And there was 10.7 cents per cubic yard, the average of all the others on Exhibit 16?

A. 10.5 cents.

Q. That made, then, 29.8?

A. Yes, sir.

Q. Then that left 1.2 cents per cubic yard which you added to make the 31?

A. I didn't arrive at it that way, Mr. Teal.

Q. Well, is there that difference between the figures?

A. There is that difference, yes, sir.

Q. Then, in addition to that you allowed 10 per cent. for—what do you call it—emergencies?

A. Contingencies.

Q. Contingencies—which amounted to about 3 cents more a cubic yard, didn't they?

A. Yes; the 10 per cent. on 31 would be about 3 cents.

Q. And so it was by that process you arrived at 31 cents, was it?

Mr. Holden: 31 cents?

Mr. Teal: 31 cents plus this 10 per cent.

A. No, I didn't arrive at it in that way at all. I placed prices on it which in my judgment were proper prices for doing the grading. After that was done Exhibit 16 was prepared to show what grading had cost us over a period of years.

Q. In Exhibit 16 as corrected, I want to locate these places. From Cloquet to Boylston and Deer River to Fosston: what state is that in?

A. Minnesota.

Q. Where is it?

A. In the northern part of Minnesota.

Q. Rock work much, or principally the scraper work you talked about?

A. Very little scraper work and some rock work?

Q. That was high priced work, was it?

A. The grading was rather high priced work.

Q. Hibbing to Virginia?

A. That is in the northeastern part of the State of Minnesota.

Q. Farming country or—

A. No.

Q. What is that?

A. Originally a timber country and some rock work, and grading rather high priced.

Mr. Holden: I prefer you not to testify from your memory,

Mr. Hogeland, I asked you to look at the exhibits for the quantities and prices so that we will not have any more errors.

Q. Brookston to Ellis; where is that line located?

A. That is in Minnesota, northeastern part of the state.

Q. What character of country, generally?

A. That was originally a timber country; some swamp and very little rock work.

Q. Jennings to Boundary Line; where is that?

A. That is in Montana.

Q. What is the character of the country?

A. It is following a valley, and considerable rock work.

Q. Marcus to Republic?

A. That is in Washington; that is following a valley; considerable rock work.

Q. Kelly Lake to Nashwauk?

A. That is in the northeastern part of Minnesota; a little rock work.

Q. Boundary to Swinton?

A. That is in British Columbia, being an extension of the line from Jennings to Boundary, following a valley and considerable rock work.

Q. Laurier to Danville?

A. That is in Washington, following a valley of the Kettle river; some rock work.

Q. Souris to Westhope?

A. That is in North Dakota; comparatively light work.

Q. Granville to Mohall?

A. That is in North Dakota?

Q. Farming?

A. Comparatively light country, farming country.

Mr. Holden: Are those two branch lines?

The Witness: Yes, sir.

Q. Columbia Falls to Rexford?

A. That is in Montana, considerable rock work.

Q. Thief River Falls to Greenbush?

A. That is in Minnesota, the northern part of the state; rather light work.

Q. Mohall to Sherwood?

A. That is in North Dakota; rather light work, farming country.

Q. Edmore to Munich?

A. That is in North Dakota; rather light work.

Q. Swinton to Fernie?

A. That is in British Columbia, extending up to the Crows Nest Coal line, moderately heavy work.
Q. Grand Forks to Phoenix?
A. That is in British Columbia, and rather heavy work.
Q. Granby Smelter Line?
A. That is in British Columbia; moderately heavy.
Q. Towner Line?
A. That is in North Dakota; rather light work.
Q. York Line to Thorne?
A. North Dakota; rather light work.
Q. Westhope Extension?
A. North Dakota; rather light work.
Q. Forbes Extension?
A. In North Dakota; that is rather light work.
Q. Munich Extension?
A. That is in North Dakota; comparatively light work.
Q. Curlow to Midway?
A. That is in Washington; moderately heavy work.
Q. Greenbush to Warroad?
A. That is in Minnesota, northern part of the state; rather light work.
Q. Midway to Molson?
A. That is in British Columbia; rather heavy work.
Q. Boundary to Kermeos?
A. That is in British Columbia.
Q. Thorne to Dunseith?
A. That is in North Dakota; comparatively light line.
Q. Molson to Oroville?
A. That is in Washington; moderately heavy line.
Q. Sioux City to Ashland?
A. That is in Nebraska. The line has since been sold to the Burlington Company; comparatively light construction.
Q. Kelly Lake to Fermoy?
A. That is in the northern part of the State of Minnesota; moderately heavy construction; very light rock work.
Q. Aneta to Devil's Lake?
A. That is in North Dakota; that is rather light work.
Q. Oroville to Boundary?
A. That is in Washington; some rock work; moderately heavy line.
Q. Crosby Line?
A. That is in North Dakota; rather light work, farming country.
Q. Billings and Northern?

A. That is in Montana; considerable rock work and a moderately heavy line.

Q. Portage la Prairie Line?

A. That is in Manitoba; rather light line, farming country.

Q. Brandon Line?

A. In Manitoba; rather a light line.

Q. Morden Line?

A. In Manitoba; rather light work.

Q. Now can you select and state which of those roads in the State of Minnesota was built in the Mesaba Range and which was built in wet country, where it has been testified it was so hard to build, so expensive?

A. The Hibbing-Virginia Line is one that was on the Range and through some swamp country.

Q. Where did you say the Kelly Lake to Nashwauk was?

A. That is in the northeastern part of the state; that is also on the Iron Range; that is also through some of the swamp country?

Q. And Kelly Lake to Fermoy, where did you say that was?

A. In the northeastern part of the state.

Q. That was in swampy country, you said yesterday?

A. Yes, sir, a good deal of swamp on that line.

Q. Then the higher priced material on here, on earth, I notice, is either in the Mesaba Range or in the swampy country; isn't that correct?

A. Speaking of Minnesota?

Q. Yes?

A. Yes, sir.

Q. They are the highest of any rates that you paid anywhere?

A. The highest price paid for earth?

Q. Yes, I am speaking of earth?

A. Yes, sir.

Q. Now, these mileages that are in here run from 4.74 miles up to, the longest road, 194.16—the Billings and Northern?

A. Yes, sir.

Q. And there are a number of short roads in there, 14 and 20 miles or thereabouts?

A. That is true.

Q. Do you think that contracts that are let on roads of that length would be a fair basis to estimate, even under reproduction, an entire system?

A. I think they would.

Q. In the building of all of these roads you transported your own material, substantially, did you not?

A. No; on the Billings & Northern we did not.

Q. I said substantially. To what extent? How about all the rest, then?

A. On some of the others our transportation was over other lines to a limited extent; the greater part of the transportation was undoubtedly over our line.

Q. That is what I mean. Now, when you are constructing over a road in operation, do the construction trains and construction material and work of that kind have the right of way, or do the passenger trains and freight trains—the regular service?

A. It is not usually carried on in that way. The construction trains are usually on the piece of line that is not under operation.

Q. To what extent would the haul of this construction material on these lines be profitable to the company hauling?

A. What construction material have you reference to?

Q. I say construction material.

A. What I mean is freight on graders' outfits, what we have been talking about, the transportation of men engaged in grading. Where it was hauled over a line in full operation it would afford the same relative profit as any other commercial business; but where it is hauled over a line under construction I believe that the ordinary tariff rates would not afford any revenue over and above operating expenses.

Q. In preparing your valuation in this case, did you prepare the valuation for the State of Washington? It is included in your valuation, is it not?

A. Yes, sir, the State of Washington is included in this.

Q. Can you state how much your valuation was for the State of Washington?

A. No, I cannot.

Q. Have you any figures showing what that valuation was?

A. Yes, sir, I have.

Q. What do those figures show?

A. What do you mean by that?

Q. What do they show? Does that include the equipment in the State of Washington? I mean what do your figures show for the State of Washington? What items are covered?

A. All items that go into the making up of a complete valuation of the property, I think in practically the same shape as it has been gotten up in Exhibit 15.

Q. You have a copy of that exhibit, have you not,—a copy of that statement for Washington?

A. If we have not, I can furnish it.

Q. I would like to have a copy of the valuation of the Great Northern for the State of Washington introduced in evidence and marked Exhibit 3.

Mr. Holden: Mr. Teal, do you mean the whole detailed figures?

Mr. Teal: He says he has the table that was prepared here.

Mr. Holden: I know, but you are dodging the question. Do you mean the details or the totals?

Mr. Teal: All I would care for, if he has got it, is that first page. I don't care about the details beyond that; I don't care to encumber the record at all.

Mr. Holden: Your request would call for the full set of figures.

Mr. Teal: All I care for is that statement on the first page, which sets forth what I refer to as details, that is those different items, the summary, added together.

The Witness: We have that. It may not be divided exactly the same as it is in Exhibit 15.

Mr. Teal: That is immaterial, as long as you have it.

Q. What was that prepared for, Mr. Hogeland?

A. That was prepared at the time the railroad commissioners of Washington were making their valuation of the lines and we were called upon to prepare the figures for our system. In order that I may be perfectly understood: I am not sure that the statement which we furnished to the railroad commissioners of Washington carried prices or whether they simply called for quantities, but whatever we furnished I can furnish you here.

Q. The statement that you refer to had your valuation in that state?

A. That is my recollection.

Q. Do you remember how that valuation compared with the valuation made by the State of Washington itself?

A. No, but it was higher than what they made.

Mr. Teal: I don't suppose there would be any objections—I didn't have it when Mr. Hogeland was on the stand, but in connection with the valuation both of the Northern Pacific Railway Company and the Great Northern Railway Company I want to offer, and I will have copies so as to save the record from being encumbered, the findings of the State Railway Commission as to the valuation of the Northern Pacific Railway

and the Great Northern Railway in the State of Washington.

Mr. Holden: Well, that is so absolutely hearsay and incompetent—

Mr. Teal: Why do you say it is hearsay?

Mr. Holden: Wait a moment. I want to reserve the right to object to it. I want to consult with my associates here. To offer in evidence in a proceeding in this court, a court of record, the findings of the Railway Commission of Washington, without the production of any witness, or the right to these railroads to cross-examine the parties who made that report, it seems to me is the baldest kind of hearsay.

Mr. Teal: If you will pardon me, I don't think Mr. Holden would make that objection if he understood how that was done.

Mr. Holden: I understand all about it.

Mr. Teal: I wish to state to the Master how it was done. In the State of Washington, the findings of the railroad commission, unless appealed from to the Court and set aside by the Court, are conclusive upon all courts. No findings can be made by the railway commission of the State of Washington without the institution of a proceeding. These findings were found in a case entitled "In the matter of ascertaining the value of the railroads in the State of Washington," in which case the railroad commission of Washtington was complainant, the Northern Pacific Railway Company and the Great Northern Railway Company et al., were defendants. These gentlemen all appeared. These findings have never been disputed, they have never been appealed from, and I simply want to introduce them—those particular findings—in this court, to show the difference, if there is any difference, between the valuation made upon these very same properties under authority of law, after a hearing, and a complete hearing, and the court can then attach such importance to it as it pleases.

Mr. Donnelly: Mr. Teal, how can that possibly have any bearing upon the question that we have under consideration here, as to the value of the entire system? How do the findings of the State of Washington, even if you have an absolute statement of the value of the property in that state, throw any light upon the question of the value of the entire system, whom we have not undertanken to distribute its value by states?

Mr. Teal: I will tell you. On the contrary, the exhibits in this case show that is just what has been done, certainly as to some of it.

Mr. Holden: As to lands, of course, because the land has been distributed.

Mr. Teal: I will state this: that there is a difference of millions of dollars in the land values along in the State of Washington, as testified to here.

Mr. Holden: I object to that statement going in in that form. There is a difference, but the reason of the difference is that the commission of the State of Washington set aside certain portions of the land that are not now actually covered by tracks, and said that in their judgment they were not properly included in the railroad appraisal; but they expressly found the value of this so called commercial property. I do not want the impression to be left by Mr. Teal's statement that the value of the railroad property as put in by the company was millions of dollars different from that found by the State Commission. It was different because of the reason I state—that they drew the line between what they considered to be railroad property and what they considered not to be railroad property, and declined to allow the so-called commercial property to be included in the railroad values.

Mr. Dillard: Before your Honor rules on it I desire to enter in the record an objection.

The Master: I will receive it subject to your objection.

Mr. Dillard: I desire to get my objection and statement on the record, however, before it is admitted.

Mr. Teal: I would like to ask Mr. Donnelly, as the Northern Pacific submitted the same valuation, if they will submit a copy of the same matter here in this court as to the Northern Pacific Railway Company.

Mr. Donnelly: I don't know whether they did or not, but if they did and there is that kind of a summary attached to it, and it is available, I will get it and bring it up.

Mr. Teal: Could you ascertain by noon, because if not, I will want to call Mr. Darling and ascertain if it has been done.

Mr. Donnelly: I will ascertain during the noon hour.

Mr. Teal: And I will make these copies and furnish them to the counsel. I do not want to put in an entire book of stuff that does not belong to this case.

Mr. Dillard: If your Honor please I desire to make an objection, and in connection with it a statement, with your permission, in behalf of all of the defendants. I object to the introduction of the evidence, first, on the ground that it

is irrelevant; second, on the ground that it is secondary and hearsay.

Elaborating the reasons on which the objections are made, or, rather, why they are taken, I would make this further statement: that if it be true, and I do not doubt the truth of it as counsel for complainant has stated, that the statutes of Washington make the findings of the commission conclusive evidence in all courts, that that statute could apply only to the courts of Washington and could have no extra-territorial effect to apply to a suit pending in the State of Minnesota; that the legislature of Washington has no right to prescribe rules of evidence for a case pending in this court. The fact that the suit was not appealed from by any road which was a party to the proceeding before the commission is without force, because an appeal would have been taken only in the event that there was some special reason which would have induced an appeal as applied to the railroads in their operation in Washington. So the fact that no appeal was taken can have no force in showing that the evidence is admissible here, for the conditions may be entirely different from what they were there. Furthermore, I desire to make this statement: The exact accuracy as to the facts I cannot state because I am speaking now from memory, but the substantial accuracy I think will not be denied. In a hearing that was had before the Commission at Portland, Mr. Fairchild, the chairman of the Washington Commission, was placed on the standing by the O. R. & N. Company to testify and to explain these valuations.

Mr. Holden: You mean a hearing before the Interstate Commerce Commission?

Mr. Dillard: Yes, before the Interstate Commerce Commission. In making the explanation he made statements somewhat along this line—and wherein I get wrong I will thank you, Mr. Teal, to correct me—that referring particularly to the O. R. & N. there was no difference between the quantities and figures which had been offered by the engineer who had made a revaluation of the O. R. & N. except as to unit values and some items which the Commission thought ought not to be allowed, while the railroad insisted that they should be allowed; that the unit valuation of the O. R. & N. Railway Company—not the unit values but the unit quantities of the O. R. & N. Railway Company were accepted as correct after such examination as the Commission had made of them but that there were differences of opinion between the Commission and the railway as to certain items of value that should

be allowed. For instance, in that particular case the O. R. & N. allowed in its valuation for its securities as if negotiated at 90 cents on the dollar. The Washington Commission in its opinion thought that the securities ought to be taken in the same way as if they had been sold dollar for dollar. In addition to that the O. R. & N. allowed a certain rate of interest and a certain time for construction. The Washington Commission, if I remember correctly, changed the time for construction, and there were some differences between them as to the rate of interest, and possibly—of this I am not quite sure at the moment—the Washington Commission allowed for some income during the time that the road was in construction. Am I right on that?

Mr. Teal: I don't remember that, but however the findings all show what it was.

Mr. Dillard: The point that I make is this. That is enough to be illustrative. The point that I make is this, that those were matters for the original consideration, if I can use the term, of the body which was engaged in fixing the valuation. They were things of an evidentiary character, upon which that body, in fixing the valuation, had to pass and from which they had to draw a conclusion. To permit their conclusions now to be introduced in this case for the purpose of influencing the Master or the Court—I mean influencing as evidence before them, will be to substitute the conclusion of that body on certain evidentiary facts, when the very thing to be arrived at by this court is the conclusion which it shall reach from the same evidence which is submitted to it. Therefore we think, as we stated in the beginning, that the evidence is from that point of view altogether irrelevant. If I have in mind the facts, so far as the O. R. & N. are concerned, the figures that the railroad —

Mr. Teal: Pardon me, but whom are you speaking for here? I mean just now who is your objection for?

Mr. Dillard: I have offered the objection for all the defendants.

Mr. Teal: I didn't know. You were speaking about the O. R. & N. all the time.

Mr. Dillard: Mr. Fairchild's testimony was given only on the O. R. & N.

Mr. Teal: I am not offering anything on the O. R. & N.

Mr. Dillard: I know that, but I am stating that as a matter of illustration.

Mr. Teal: To illustrate what, so far as the Northern Pacific is concerned?

Mr. Dillard: To illustrate the fact that the evidence is irrelevant. And I was going on to say, when Mr. Teal addressed me, that if I have the figures with substantial accuracy, after all those differences were allowed for, in illustrating by the O. R. & N., that the railway valuation was between 24 and 25 million dollars, and the valuation of the Washington Commission, with those things all stricken out, was between $19,000,000 and $20,000,000 I think. Those are about the figures, I believe.

Mr. Teal: I would like to ask Mr. Dillard one question. When you object to this on the ground that it is hearsay, you are not objecting that this copy will not be a copy of the report as made, are you?

Mr. Dillard: Oh, no.

Mr. Teal: You are not requiring me to get a certificate?

Mr. Dillard: By no means. As far as I am concerned it may be treated in exactly the same manner as if it had the great seal of the state, and the seal of the Commission, and all.

Mr. Teal: I would only say this, without arguing it further: That at this time this is certainly a proper cross-examination, as I will argue at the right time. I will also say I do not quite see why there are such heated objections to this when I am only asking the same questions which were answered without any objection, and allowed to go into the Minnesota valuation.

Mr. Holden: The Washington figures were not offered in the Minnesota case.

Mr. Teal: No. I say in this case, when these other witnesses were on the stand testifying as to valuation, we asked the others how their valuation compared with the State of Minnesota, and there was no objection, and they stated it.

The Master: Mr. Hogeland stated in reference to this that it is higher than the Washington.

Mr. Teal: What is it?

The Master: He has already stated that his valuation is higher than the Washington.

Mr. Donnelly: You did not offer any findings of the State of Minnesota, did you?

Mr. Teal: Because they were expressly not required.

Mr. Donnelly: Mr. Hogeland has said here, as the Master stated, that his own testimony as to the value of the Great Northern in Washington was higher than that of the Commission?

Mr. Teal: If he will state how much higher, and ascertain that, I will not put in these findings.

Mr. Walter: If he will give us the figures.

Mr. Donnelly: I suppose it would be an easy matter to find out what the difference is.

Mr. Teal: I should be glad indeed not to encumber the record.

Mr. Donnelly: I do not believe that the differences were stated in the case of the State of Minnesota.

Mr. Teal: Oh, yes, they were, Mr. Donnelly.

Mr. Holden: The Minnesota figures are on a different basis. That is in litigation here in this court—not before the same master—perhaps I am wrong about being the same court, but it is in litigation here, and the figures which were referred to there were the figures offered by Mr. Morgan in the court, at which time we had an opportunity to cross-examine him. Now you are offering figures which were never taken in any court, but before a legislative body only, and that presents to my mind quite a difference. We have never, as Mr. Dillard stated, appealed from the conclusions of the Washington State Commission, for reasons which seemed perfectly satisfactory to us. We have never had a chance to deal with the basis upon which the Washington Commission arrived at this conclusion in the court. We have never dealt in court, I mean, with those figures. We do not know what the basis upon which they acted was, except as we may draw deductions. Now, the Minnesota figures are on a very different basis.

Mr. Teal: I think, Mr. Holden, you were not present at any of these hearings in Washington, were you?

Mr. Holden: No.

Mr. Teal: So you don't know what went on there.

Mr. Holden: I have read the findings.

Mr. Teal: But you don't know what the railroads did there, and what they submitted.

Mr. Holden: In a general way I do.

Mr. Teal: But at any rate, I will not take up further time in arguing this.

Mr. Dillard: He knows only by hearsay.

Mr. Teal: I was going to say so. At the proper time I will argue the matter, and, as I say, if Mr. Hogeland can state the difference, and will state the difference, and it will be stipulated by Mr. Donnelly what the difference is, I am willing to have it stated, just as it was in the Minnesota case.

Mr. Holden: We will enter our objection to that, because

that goes into trying what I think is a collateral issue here—the difference between us and the Washington Commission. If this were a proper field to make that kind of inquiry, I should not have any objection, but it seems to me it is immaterial, in addition to being hearsay, because it takes us too far afield.

The Master: You do not claim that the findings in that suit are binding in this suit?

Mr. Teal: No, but I do say this: that if a proper, legally constituted body has made an investigation as required by law, and a witness who is an expert, testifying upon that same subject, differs very radically, or differs at all, or does not differ, for that matter, from the result of the examination of a body of experts provided by law, on the very same question of facts,—I say that it goes to affect his general testimony as an expert, and it can be used for that purpose.

Mr. Wimbish: May it please your Honor, I think this evidence is clearly admissible from perhaps a little different view than that advanced by Mr. Teal, and discussed by the counsel. I have not read this myself—I have only glanced at it, but as I understand this commission has separated that property which in its opinion is properly devoted to railway uses, either now or will be in the early future, from the properties that they class as not being used for railroad purposes. They have arrived at values after a hearing. Now let us consider just that portion of the property in the State of Washington that is not devoted to railroad purposes,—the idea being to arrive at the value of that property. I do not know any way to arrive at the value of real property except by consulting the opinions of those who are familiar with values, with such other circumstances as sales, et cetera, in particular instances, as may have occurred, but that is true as shown by the testimony in this case and by witnesses for the railway companies, by Mr. Cooper for the Northern Pacific, who was on the stand. He testified as to the values in St. Paul, Minneapolis, Spokane, Seattle, and Duluth, and he stated on the stand—it appeared from his evidence—that he had had gentlemen who were presumed to be familiar with real estate values to go out and value this property and make report to him. He based his opinion on those reports. We made no objection, because we saw no other way of getting fairly at the value of the property, which property is to be valued for reproduction purposes and not for sale. So it certainly seems to me that a finding of a state commission, after a hearing, where the parties were represented and participated, as to the value

of certain property within that locality, is certainly admissible as evidence if for nothing else to be compared with evidence given by Mr. Cooper, founded upon the opinions of real estate men in Seattle as to the value of that Seattle property. Now, clearly in answer to that it would be admissible. So far as it might be admissible for other purposes, I think it is for that too. This reproduction value is a thing that has puzzled me very much. I do not know how to arrive at a reproduction value, and it does not seem to me that anybody else does. It is all hypothetical; it is theoretical; it is a matter of opinion, not a matter of fact; nobody knows. And if it is merely a matter of opinion, then it seems to me that the opinion of a Washington commission, in a case of this kind, is, as to the cost of reproduction, rights of way, etc., in that locality, is certainly admissible evidence whatever weight may be given it by the master.

Mr. Holden: Mr. Wimbish: Aren't you stating Mr. Cooper's basis rather inaccurately? While he did testify, and so did Mr. Hayden of the Great Northern, that they secured the opinions of those versed in values at the different localities, yet that they made use of them simply in molding their own judgment.

Mr. Wimbish: I think not, Mr. Holden. I certainly do not want to incorrectly state anything he said, but my recollection of the testimony (and I have not read it since I heard him on the stand) is this: that he selected particular men, and I think named them, and gave their estimates of value, and I think he further stated that he himself did not know the value of a great many of these places, but acted upon the opinions of men to whom he referred the question.

The Master: I think that is so.

Mr. Holden: My recollection does not go quite in that way. Of course the evidence will determine that subject.

Mr. Dillard: Value is a question of opinion always, in real estate.

The Master: I do not see why it would not be perfectly proper for you to ask Mr. Hogeland on cross-examination if he knows about those findings, and what the difference is, if he knows. I mean as a matter of cross-examination.

Mr. Teal: That is what I have asked him—as a matter of cross-examination, and he said he does not know.

The Master: He said his were higher, but he did not know how much higher.

Mr. Teal: In order that the court may have acurate knowledge as to how much higher, I am perfectly willing to have

Mr. Hogeland ascertain it, if he will do so, the Northern Pacific ascertain it, and stop just simply with that information. If not, I have the book issued under authority, to which no objection is made, to give the court that information. That is all I want to get in.

Mr. Holden: Let me talk to Mr. Donnelly just a moment.

Mr. Donnelly: I understand the testimony has been received subject to the objection.

The Master: Certainly, I have to receive it if it is offered.

Mr. Teal: I am trying to save the record from being encumbered, that is all.

The Master: I suppose that when you gentlemen argue the case, any testimony which any of you claim is incompetent and inadmissible, you will point out—anything you want a ruling on.

Mr. Teal: Yes.

Mr. Donnelly: In connection with Mr. Teal's request for the submission of the Washington Commission's findings, we thing the better way, perhaps—always reserving our objection—would be to prepare a statement showing, as regards the Northern Pacific Railway Company, what his own figures were as to the value of its property in that state, and showing also what the Commission's findings were as to its value in that state. Of course, the great objection, as Mr. Holden suggests, to the incorporation of the Wahsington findings in this case at this time, is that we are almost compelled, in order to explain the difference, to supplement that testimony with evidence of the basis upon which the Washington Commission proceeded, and to show wherein we conceive that basis to have been erroneously adopted. Now, of course, that testimony has been put in as to the Minnesota Commission's findings, and you are unnecessarily protracting the case without, as I think, actually furnishing any substantive evidence from which a real conclusion can be drawn, because you cannot segregate the valuations actually submitted here as to this entire property and say how much of it is apportioned to the State of Washington, and therefore you cannot draw any inference from the findings of the commission as to its value in that state, except as to particular items, in so far as they are capable of identification, and that would be true as to some of them—perhaps as to the real estate. But to introduce the whole thing now—and of course I am suggesting this simply as argumentative and as reasons why it should not be given the apparent force that it may have, because in contrasting the difference between their findings and our own

evidence, to introduce the whole thing really opens up a question that might unnecessarily protract the hearing.

Mr. Teal: Let me ask Mr. Donnelly this: Did you use any other method in the valuation in Washington than you do here?

Mr. Donnelly: I do not understand that the methods were different, but the Washington Commission in reaching its conclusions proceeded upon theories that certainly we cannot subscribe to.

Mr. Teal: I didn't ask you to do that. The question I was asking you is whether or not in Washington your method of valuation, or whatever you choose to call it, was the same as you have used all along the line.

Mr. Donnelly: I understand that it is.

Mr. Teal: Now, why does it reopen the case because the Washington Commission state the method they used? They disagree with yours, as the State Commission here have disagreed, and what of it? What is there to open?

Mr. Donnelly: They state what their theory was, but we would want to go on and show, as we did show in the case of the Minnesota findings, why that was not a proper method to pursue.

Mr. Teal: Why haven't you already shown that from your standpoint?

Mr. Donnelly: We have not dealt directly with their method of procedure, because it has never come up before this time.

The Master: All that has appeared in reference to the other commission so far in this case was simply the question, Are not your figures higher than those which they made? And the answer was, Yes, and in some instances they stated much higher.

Mr. Teal: In every instance they stated the difference.

The Master: It has not been folowed up by anything else.

Mr. Donnelly: Mr. Cooper followed it up with an analysis of the differences as regards real estate values between those arrived at in the testimony of Mr. Morgan and—

Mr. Teal: He did on the land values, but nothing else. There was no other explanation except on the valuation of the land, and Mr. Cooper can explain the difference between his valuation on the land in a moment, if he wants to.

Mr. Donnelly: He can't explain it in a moment; it will take at least half a day.

Mr. Holden: It is proper cross-examination to ask Mr. Hogeland anything about the figures he submitted in the

State of Washington. If they were on a different basis, if they were different than the figures now submitted, I concede inquiry into that would be proper cross-examination. But it is no more proper cross-examination to ask him what somebody else said about his Washington figures, or thought about his Washington figures, than it would be to ask him what some third person not a party to this case said to him on the street.

Mr. Teal: I think I can ask a question to clear it all up.

Mr. Holden: I am directing my statement to your desire to get into this case the basis of the Washington State Commission's findings. Now, I claim that is not proper cross-examination. It is mere hearsay, the statement or judgment or opinions of third parties, not of a court, and therefore it is not competent evidence in this case from any point—cross-examination or otherwise.

Mr. Teal: If you will permit me, I will ask the question.

By Mr. Teal:

Q. Mr. Hogeland, your office, under your direction, made a cost of reproduction of Great Northern Railway system, in the State of Washington, did it not?

A. Yes, sir.

Q. How much were your total figures?

A. I can't tell you from memory.

Q. To what date did that apply—as of June 30, 1908?

A. I am not clear as to what date it was brought. My recollection is it was of the date of June 30, 1908.

Q. You can ascertain the exact amount of your valuation, can you not?

A. Yes, sir.

Q. And will you do so?

A. Yes, sir.

Q. The state also made a valuation at the same time, did they not?

A. I understand they did, although all that I saw was a statement of their findings of quantities. I have never seen their statement of valuation.

Q. Do you know whether your valuation was more or less than that of the state valuation?

Mr. Holden: We object to that as not proper cross-examination, calling for hearsay, and incompetent testimony.

Mr. Teal: You just conceded that I could do that. I was trying to straighten out this record.

Mr. Holden: I did not concede that, Mr. Teal. Apparently you did not listen to what I said.

The Master: I will receive it subject to the objection.

The Witness: My understanding is that their figures were lower than ours. That I obtained from other sources, not having seen the figures which they did make.

Mr. Teal: Now, subject to the objection, and to avoid what I suppose everyone is trying to avoid—unnecessary length of this case, I will ask if it will be satisfactory for Mr. Hogeland to ascertain his figures, to take the findings and ascertain the total figures, and state what the difference is.

Mr. Holden: That was Mr. Donnelly's suggestion.

Mr. Teal: He said to make a statement. I thought you meant a long statement.

Mr. Donnelly: Oh, no.

Mr. Holden: We will have prepared, subject to the objection we have made, that it is not competent here, a tabulation contrasting the railroad figures and the figures of the state commission, reserving our right to object to it later on.

The Master: To object to it as immaterial?

Mr. Holden: And upon the grounds we have urged here to-day.

Mr. Teal: Then, as I understand it, counsel for the complainants will prepare this table and submit it to me?

Mr. Holden: Yes, sir.

Mr. Teal: I will say that if that table is satisfactory, I mean if it states the facts (as I presume it will) as appears in here, then I will not make the copy from this statement. If it does not, I will make a copy of it and file it here and send it to counsel. That will avoid encumbering the record.

Mr. Holden: Very well.

By Mr. Teal:

Q. In your estimate of reproduction you figured that the equipment would run at interest for two years?

A. Yes, sir.

Q. Why?

A. That was to anticipate the construction of the equipment, the money having to be on hand approximately at the time the orders were placed, and also to cover the use of the equipment after it had been received and used for construction purposes, before the line was put into opration.

Q. I understood you to state that all of this equipment as figured was absolutely new in the shops?

A. The valuation which we have put in is based on new equipment.

Q. Absolutely new?

A. Yes, sir.

Q. Not used?

A. Yes, sir.

Q. And you allow interest on it for two years at six per cent.?

A. Yes, sir.

By Mr. Holden:

Q. Mr. Hogeland, speaking about the interest on equipment, as I recall it, you estimated a period of eight years for the reproduction of the system. Am I right in my recollection that you testified that the purchases of the equipment would begin at the end of the fourth year, and that this charge of two years interest at six per cent. was an average over the period of four years for the total sum required by the equipment?

A. No, I don't think I testified in that way.

Q. I don't recall, but I had it in mind that it was testified that the equipment would begin to be purchased at the end of four years and that the total amount of money required to buy equipment would be spread over the last four years, whereby there would be a total amount used for an average period of two years at the legal rate of interest, six per cent. And if I am not right, say so?

A. I did not testify in that way, and I do not have it in my mind that way.

Q. Then, I am wrong about it.

A. My idea was that the purchases of equipment would begin pretty soon after construction was undertaken, and would be carried along during the whole period of reproduction.

Q. Then the money would actually be out longer on the basis that I suggest, if you begin the purchase of equipment soon after construction?

A. I did not figure but what some portions of the road would be put in operation before the entire eight year period was passed, but that any portions that were put in operation during that period would not be operated at a profit.

Q. Yes I understand that. Then, if I understand you, you have only taken two years at six per cent. on the amount necessary to purchase the equipment?

A. That is true.

Q. In speaking about the figures or the cost of overhaul, in your testimony this morning, you said it was 2.2 cents; is that right?

A. Yes 2.2 cents. Now, you said the system. I want to confine that to Exhibit 16.

Q. That is for lines shown on Exhibit 16 Corrected?
A. Yes, sir.
Q. Have you in mind the corresponding figures which were shown in the Minnesota rate case, and which perhaps were in your mind yesterday?
A. Yes, sir. They were 3.3.
Q. The figures there were 3.3 cents?
A. Yes, sir.
Q. For overhaul?
A. Yes, sir.
Q. Mr. Teal asked you a question—I am not clear what he said, but it left the impression on my mind that in the transportation of material, probably the men, materials, outfits and supplies for graders, referred to on the work done on Exhibit 16—most of that was probably done over the Great Northern lines, and not over foreign lines. Was it in reference to Exhibit 16 that that question was asked?
Mr. Teal: Exhibit 16.
Q. Is it not a fact that in the construction of the largest item on Exhibit 16, the Billings & Northern, that a very large amount of transportation was paid for by the Great Northern over foreign lines?
A. Yes, sir, that is true of that particular line.
Mr. Teal: I think he testified to that yesterday, and I don't object to the counsel testifying, but this is his witness and I don't see why he should ask if this is not a fact and if that is not a fact.
Mr. Holden: I think it has all been in testimony here before.
Mr. Teal: He has testified about that, and I do not think it is necessary to lead him up to it.
Mr. Holden: I think at the last hearing that was gone over. Do you recall about that?
Mr. Teal: Yes, it was gone over at the last time.
The Master: Yes, I think it was.
Mr. Teal: And it was also gone over this morning.
By Mr. Dillard:
Q. Mr. Hogeland, you have a general knowledge of the Pacific system, that is, the O. R. & N., the O. S. L. and the U. P., have you not, from Omaha out to Portland?
A. Yes, sir, I have been over the main line of the Union Pacific and the Southern Pacific.
Q. You know the country through which it passes?
A. Yes, sir.
Q. The same conditions as to increase and value and—

Mr. Teal: Now I object again. Let him ask the question. I don't want these leading questions. Let the witness say what he knows. I object to that form of questions to a witness of this character—an expert witness.

Mr. Dillard: I think if you had heard the question you would not have objected to it, but I will put it to suit you.

Q. Regarding the increase in lands there which were used for rights of way and terminals in the cities, as applied to the Union Pacific, that whole western country, whether it is the Union Pacific or the O. R. & N. or the O. S. L., or anything of that kind, do or do not the same facts as to increase in values apply to all those railroads?

A. My judgment would be that practically the same increase would apply.

Q. You keep up with the Union Pacific system, the reports and things of that kind with regard to it, in a general way, do you?

A. Yes, sir, I read the extracts of the reports as to what has been done on the Union Pacific.

Q. Of course you have made no revaluation of that, you can't tell, you do not know, and I have not asked you; I would not undertake to have you testify except on this general question: from what you know of those porperties, as to their general physical condition, how would they compare as to being as good or not so good as the Northern Pacific or Great Northern? Just state about it in a general way, if you know.

A. From the trips that I have made over the Union Pacific system and the information I have obtained from reading their reports, my opinion is there is no substantial difference in the properties, as to their physical condition.

Q. If an effort were made to reproduce that system, in your judgment as an engineer, should or should not the same general method be applied to it in reproduction that you have applied to the Great Northern Railroad?

A. That would be my judgment.

Q. In other words, you think that is a method of reproduction that should apply to railways generally?

A. Yes, sir, that is my opinion.

Q. The same general method. What comparative result it would produce on the Union Pacific it would be impossible for you to say, would it not, without knowing the values and quantities?

A. Yes, sir, it would.

Q. Considering that railroad today as an active, going concern, of course you could not come within any close approxi-

mation of it, but I would like your judgment, for whatever it may be worth, as to whether it would be, treated as a going concern, something like the value of the Northern Pacific and the Great Northern?

A. My judgment is that there would be no substantial difference.

By Mr. Teal:

Q. Mr. Hogeland, you of course are familiar with the Union Pacific Railway, or you would not be testifying—this system you are speaking of, the Union Pacific and the O., R. & N.?

A. I am familiar with the main line of the Union Pacific from Omaha to San Francisco—the Union Pacific and Southern Pacific.

Q. You were asked about the Short Line and the O., R. & N.?

A. I was going to tell you what I am familiar with. And with the O., R. & N. between Spokane and Portland, and with the Southern Pacific between Portland and San Francisco, and between San Francisco and Los Angeles. Those are the portions that I am somewhat familiar with.

Q. Now let us take up the O., R. & N. The O., R. & N. runs along the Columbia river, doesn't it, for a large part of the way?

A. Yes, sir, for a considerable distance.

Q. And the Columbia river, prior to the building of the railroad, was operated by steamer lines, wasn't it?

A. That is my understanding, yes sir, for a portion of the distance.

Q. When that railroad was constructed, do you know whether the steamer lines were kept in operation and the different pieces of road operated in connection with it was constructed?

A. No, I can't tell you as to that.

Q. Do you know whether or not during that time it earned the greatest profits it ever made in its history—during the time of construction?

A. No, sir, I can't tell you.

Q. If it did, would you build that so it would not make a dollar, or would you build it so it would make money as it went along,—on your basis of engineering?

A. I think that all natural advantages would be taken care of, would be employed in the reproduction of that piece of line, the same as they would in any other construction following a navigable river; the same as the Great Northern and the North-

ern Pacific did in the construction of the Spokane, Portland & Seattle?

Q. And you think, then, that the reconstruction of the O., R. & N. on your basis, assuming the conditions of course as they were and as they are, would take how many years to build it?

A. I was speaking of the entire Union Pacific system.

Q. Well, let us take that end of it?

A. I have not gone into the details of that. I am simply answering in a general way, taking the entire Union Pacific system.

Q. Now let us jump down to San Francisco. You, of course, remember when the Central Pacific was built from Sacramento—wasn't it?

A. I can't give you the details of when it was built.

Q. You don't know, then, whether or not a line of steamers was operated by the Central Pacific from Sacramento to San Francisco before the line got into San Francisco, and they were carrying both freight and passengers?

A. No, sir.

Q. Now let us assume a hypothetical railroad there; that you have the problem to build a railroad from San Francisco to a connection out at Ogden, where they made their connection. You have at one end of the railroad a large city, on a bay, connected with a navigable stream, and you commence your construction at Sacramento, at substantially the head of navigation. Do you think that you would build that in such a way that that would make no money in that time? Is that the way you would build it? Or would you use the navigable streams and make your connections that way pending the building?

A. You would certainly use all natural means of communication that you could.

Q. And if that would produce income and results and benefits, you would want to take advantage of it, wouldn't you?

A. Certainly.

Q. You have heard of Leland Stanford, have you not?

A. Oh, yes.

Q. And C. P. Huntington?

A. Yes, sir.

Q. And the Crockers?

A. Yes, sir.

Q. They were the early builders of the Central Pacific?

A. Yes, sir, their names are familiar.

Q. And was the Central Pacific in their hands reputed to be a money making road in its early history?

A. I can't tell you as to that.

Q. Now, not to unduly prolong this investigation, but going down, you know the river is navigable to Stockton, don't you?

A. I don't know how far it is navigable. It is navigable for quite a distance.

Q. If you were building a road from Stockton down through the rich valley south of there and eventually intended to reach San Francisco, would you use the means of communication by water between Stockton and San Francisco in your building, or would you just simply say, "I will not use it until it is all done to San Francisco?"

A. No. You have misunderstood the entire scheme if you think that is the plan.

Q. I think that is your plan?

A. We propose in all my reproduction ideas to use any and all existing means of communication. That would mean other railroads or waterways in existence, anything that existed, considering that the system under construction had been obliterated.

Q. Then going out from Omaha, through the Nebraska country, rebuilding the Union Pacific system under the same system, do you think it would be possible, under your scheme of reproduction, to build a railroad out in that section, through the territory that the Union Pacific runs, through the cities it runs, with its locations and connections, and not make any money during the time of building?

Mr. Holden: Do you mean net money or gross money?

Mr. Teal: I mean net money.

Q. Do you think that would be possible, under any plan of operation?

A. That would depend on the length of time the reproduction extended over, applying the same method to the Union Pacific. I doubt whether any of it would be operated at a profit during the reconstruction period.

Q. Then, under your theory of reconstruction, so that I and the court will understand that plainly, your method of reconstruction would result, so that you have grave doubts, even in a section like Nebraska, that you could get any profits from operating any part of that railroad during the construction?

A. Oh, there might be certain stretches that would be operated at a profit, but taken as a whole, during the reproduction period, my opinion is that it would not be operated at a profit.

Q. Now, perhaps we are geting to nearly an understanding. Would any portions, in your opinion, be operated at a profit during the period of reconstruction?

A. I think my previous answer answers that; that there might be certain portions which would be operated at a profit but taken as a whole, I do not consider that it would be.

Q. Not even enough to pay the interest on construction?

A. Well, if it is not operated at a profit, you would not have any money to apply on interest.

Q. Well, I call interest a charge. We are speaking about net profits now, over and above everything?

A. I understand. It would not be operated at a profit—and when I say "profit" I mean over and above the operating expense.

By Mr. Walter:

Q. Do you know of any road that would make profits under your plan of reproduction?

Mr. Teal: During the reconstruction?

Mr. Walter: During the reconstruction period. During the time of reproduction.

A. What have you reference to? A system comparatively the same as the systems we have under consideration?

Q. To build a road, reproduce a road of substantial amount, following the plan you have laid out for the Great Northern.

A. If you take short stretches of line, the construction period is soon over and they are turned over for operation and the business grows, and it is not long before the lines are on a paying basis.

Q. Your period of reproduction would be short in that case, too?

A. If you take individual pieces.

Q. I am speaking now of the period of reproduction, during that time, whether the line is short or long. Would it earn any money during that period, any line that you know of, following your plan?

A. Oh, yes; I am quite sure there would be some lines that would.

Q. Name some of them?

A. You are speaking now of the Great Northern?

Q. No, I am not speaking of the Great Northern at all; I am ignoring it, the Great Northern. You say it would not.

A. I had in mind certain portions of the Great Northern which probably could be operated at some profit.

Q. And would pay the operating expenses and interest on the money invested in those particular parts of the line?

A. Not necessarily the interest, but probably show some profit over operating expense.

Q. To be applied to interest?

A. Yes.

Q. Now, aside from the Great Northern, and aside from the Union Pacific, which you say would not earn anything, do you know of any railroad operations that during the time necessary to reproduce them under your system would earn anything above operating expenses?

A. Oh, I can think of some lines through well settled country that might earn a little something during the reproduction period, but in my opinion not more than what would pay operating expenses.

Q. When did you first begin to consider the reproductive cost of the Union Pacific system?

A. My attention was called to it during the Spokane trial at Portland.

Q. In what way?

A. By Mr. Cotton, in a general way.

Q. What did he ask you to do—make an investigation?

A. Not necessarily; he asked me my opinion.

Q. Just asked your opinion in an offhand way?

A. Yes, sir.

Q. Without any preliminary investigation by you?

A. Why, he could ask my opinion without any investigation.

Q. From that time on have you made any investigation of the Union Pacific system for that purpose?

A. Not for that purpose, no sir.

Q. Do you know any more about the Union Pacific system than you do about the Santa Fe or the Milwaukee or the Northwestern?

A. A little more, yes, sir.

Q. How much more?

A. What do you mean by that?

Q. How much more consideration have you given to the cost of reproduction of the Union Pacific system?

A. I say I have given some more consideration.

Q. Have you any idea as to the Milwaukee's cost of reproduction?

A. The entire system?

Q. Yes.

A. No, sir, I have not.

Q. The Northwestern?

A. No, sir.

Q. Have you of any system other than the Great Northern?
A. In detail? That is the only one I have gone into in detail.
Q. Or in the aggregate?
A. No, only in a general way, as I have testified.
Q. When were you last over the Union Pacific Railroad?
A. The entire system?
Q. Yes.
A. Oh, it has been a great many years since I have been over the entire system; I have been over a portion of the line.
Q. Simply as a passenger?
A. Yes, sir.
Q. That is the extent of your knowledge?
A. Except the examination of the reports. It is simply general knowledge.
Q. What reports of the Union Pacific have you examined?
A. The annual reports that appear and are tabulated in the railroad journals.
Q. You see that as to all other lines in this coutnry, do you not?
A. A number of other lines, yes, sir.
A recess was here taken until two o'clock p. m.

AFTERNOON SESSION.

Mr. Donnelly: Mr. Teal, Mr. Johnson has prepared, at your request, a statement bringing down Johnson Exhibit No. 22 to date, and showing the income for the year 1909 in addition to that shown for the previous years. I suppose in order not to encumber the record that the original exhibit might be withdrawn?

Mr. Teal: Excepting that the original record has a number of details attached to it. This can be attached right to the top of the original exhibit.

Mr. Donnelly: This is an exact copy of the original exhibit No. 22.

Mr. Teal: I had some details on it.

Mr. Donnelly: It may be offered in evidence, in lieu of Johnson Exhibit No. 22, the statement bringing the record of the income of the Northern Pacific Railway Company and its disposition down to and including the year 1909.

The Master: June 30?

Mr. Donnelly: June 30, 1909, and the original exhibit No. 22 may be withdrawn.

The Master: This is substituted?

Mr. Donnelly: Yes. Now, Mr. Teal, you asked for a detailed statement of the treasury securities of the Northern Pacific Railroad Company down to June 30, 1909. Mr. Johnson has prepared that, and that may be offered in evidence.

The same was marked Complainant's Exhibit 28.

COMPLAINANT'S EXHIBIT 28 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

TREASURY SECURITIES, JUNE 30, 1909.

Par Value.	Title of Securities.	Book Value.
$ 6,005,000.00	Northern Pacific Ry. Co. prior lien bonds	$ 6,179,090.98
7,449,000.00	Northern Pacific Ry. Co. Gen'l lien bonds	5,573,730.61
191,000.00	Nor. Pac. Ry. Co., St. Paul Duluth Div'n bonds	190,738.75
3,685,000.00	Northern Pacific—Great Northern Jt. bonds	3,624,875.37
2,477,000.00	Washington & Columbia River Ry. Co. bonds	2,394,612.50
62,000.00	Minnesota Transfer Ry. Co. first mtge. bonds	62,000.09
7,000,000.00	Northwestern Improvement Co. bonds	7,000,000.00
74,000.00	Northern Pacific Terminal Co. of Oregon bonds	85,100.00
5,000,000.00	Chgo., Burlington & Quincy R. R. Co. general mortgage bonds	4,941,487.50
100,000.00	Colorado & Southern Ry. Co. refunding and extension bonds	100,013.94
2,127,200.00	Clearwater Short Line Railway Co. stock	2,127,200.00
1,000,000.00	Washington Central Ry. Co. stock	221,279.94
12,500.00	Chgo., Burlington & Quincy R. R. Co. stock	25,093.54
59,850.00	St. Paul Union Depot Co. stock	59,850.00
136,800.00	Lake Supr. Terminal & Trfr. Ry. Co. stock	97,001.00
300,000.00	Missouri River Railway Co. stock	300,000.00
50,000.00	Connell Northern Railway Co. stock	50,000.00
10,000.00	Western Dakota Railway Co. stock	10,000.00
10,000.00	Shields River Valley Railway Co. stock	10,000.00
2,775,000.00	Northwestern Improvement Company stock	2,775,000.00
$38,524,350.00	Total	$35,827,074.13

Mr. Donnelly: You also asked for a statement of miscellaneous income derived from interest on account, cash in bank, and investment in securities September 1, 1896, to June 30, 1909. Mr. Johnson has prepared that statement and I now offer in evidence a copy of it which may be marked Johnson Exhibit No. 29.

The statement was so marked.

COMPLAINANT'S EXHIBIT 29 (JOHNSON).

NORTHERN PACIFIC RAILWAY COMPANY.

MISCELLANEOUS INCOME DERIVED FROM INTEREST ON ACCOUNTS, CASH IN BANKS AND INVESTMENTS IN SECURITIES—SEPTEMBER 1, 1896, TO JUNE 30, 1909.

INTEREST:	
On bank balances and accounts	$ 6,895,867.25
St. Paul & Grand Trunk Ry. Bonds	1,100.00
Superior Consolidated Land Co. Bonds	2,750.00
Northwestern Improvement Co. Bonds	2,347,666.66
Atchison, Topeka & Santa Fe Ry. Bonds	6,160.00
Southern Pacific Ry Co	19,600.00
Oregon Short Line Railroad Co. Bonds	3,133.33
Chicago, Burlington & Quincy R. R. Bonds	66,666.67
Colorado & Southern Ry. Co	1,429.99
Northern Pacific Terml. Co. Bonds	4,440.00
DIVIDEND:	
Northern Pacific Express Co. Stock	3,668,433.89
Rocky Fork Coal Co. Stock	23,133.00
Oregon Railway & Nav. Co. Stock	239,105.00
Northern Pacific Coal Co. Stock	268,218.43
Puget Sound & Alaska S. S. Co. Stock	92,981.14
Northwestern Improvement Co. Stock	777,000.00
Chicago, Burlington & Q. R. R. Co. Stock	430.00
Stumpage cut from lands in Washington	7,492.99
Net receipts from Town Sites	15,347.52
Total	$14,440,975.87

St. Paul, Minn.,
Nov. 23, 1909.

Mr. Donnelly: Yesterday, Mr. Teal, you asked Mr. Cooper to prepare a statement of the acreage of land that came to the Northern Pacific Railway Company at the time of reorganization, the disposition that had been made of it, the cash that had been realized from it, and the disposition that had been made of the cash. That statement has not as yet been completed. Mr. Cooper will complete it and sign it, and I assume that it will not be necessary to have him testify, but simply file it in connection with his testimony and as a part thereof.

Mr. Teal: Yes.

HOWARD ELLIOTT, recalled as a witness on behalf of the complainants, testified as follows:

By Mr. Donnelly:

Q. Mr. Elliott, you are the president of the Northwestern Improvement Company as well as of the Northern Pacific Railway Company?

A. Yes, sir.

Q. Did you prepare and submit in the Minnesota rate case a history of the origin and development of the Northwestern Improvement Company?

A. Yes, sir.

Q. I show you Exhibit 29 and ask you to state if that is a copy of the statement that was submitted in that case.

A. To the best of my knowledge and belief, this is a copy of the statement that I submitted in my testimony in the Minnesota rate case.

Mr. Donnelly: Then we will offer that in evidence, in response to your request, Mr. Teal, for a statement, of the history of that company.

A Brief History of the Origin and Development of the Northwestern Improvement Company.

When the Northern Pacific Railway Company acquired the property of the Northern Pacific Railroad Company in 1896, the title to considerable property in St. Paul located between Fourth and Sixth streets, purchased and paid for by the Northern Pacific Railroad Company at a cost of $849,881.38 stood in the name of various individuals as trustees; said property was purchased for the purpose of providing additional terminal facilities for the Northern Pacific Railroad Company, the great portion of it is now in use for that purpose, and has been conveyed by the Improvement Company to the Railway Company. The portion of this property still owned by the Improvement Company appears in the list of assets attached as "Town Lots, St. Paul, Minnesota."

Also the title to certain property in Minneapolis near the Union depot, purchased and paid for by the Northern Pacific Railroad Company at a cost of $308,746.22, stood in the name of the Minneapolis Terminal Company; the property in question was acquired for the purpose of establishing a union passenger depot, in conjunction with other railroads, and is still held for that purpose; it is included in the list of assets of the Improvement Company as "Town Lots, Minneapolis."

Also, immediately after the Northern Pacific Railway Company acquired the property of the Northern Pacific Railroad Company, it sold certain of its outstanding land contracts covering sales of its land grant lands, for $1,223,000, using the money received therefrom to purchase and retire General First Mortgage bonds and Pend d'Oreille Division bonds of the Northern Pacific Railroad Company; bearing interest at 6 per cent., and redeemable from the proceeds of the sale of the land grant. The land contracts, or the bulk of them, were later acquired by the Improvement Company at the price at which they had been sold. Such of the contracts as have not been paid up, are included in the item of assets of the Improvement Company as "Accounts Receivable."

In October, 1897, the Northwestern Improvement Company was organized under the laws of New Jersey for the immediate purpose of acquiring and holding the properties at St. Paul and Minneapolis, and the land contracts above referred to, and said properties were conveyed to it; the Improvement Company paying therefor $2,000,000 of which $1,000,000 was in capital stock and $1,000,000 in four per cent. debenture bonds; being the entire amount of the captail stock and bonds issued by the Improvement Company at the time of its organization.

When the Improvement Company was organized, no one anticipated that it would attain its present magnitude, but, as time went on, it was found convenient and desirable that in a growing region, an organization should exist, adapted for and capable of, handling enterprises, not coming under the head of transportation, but which would be helpful in developing the business of the railway company and the territory tributary to it, and at the same time, if the enterprises were successful, make a profit that might ultimately go to the latter's stockholders. The original scope of the Improvement Company was enlarged to meet this situation. To pay for additional properties acquired, it has from time to time increased its capital stock and issued additional bonds; the amount of its capital stock being March 31, 1909, $2,775,000, and of its bonds $8,298,140.57, all of which stock and bonds are owned by the Northern Pacific Railway Company and held in its treasury, excepting bonds to the amount of $1,298,140.57 deposited with the trustee of the St. Paul-Duluth Division mortgage, as hereinafter explained.

One of the earlier important transactions of the Improvement Company was the purchase in October, 1897, from the

Railway Company of all of the land grant lands of the latter then unsold, between the Missouri River and Glendive, Mont., aggregating about five and a half million acres for a consideration of $1,755,000. The purpose of this sale was to provide money to pay off the Missouri River Division mortgage of the Northern Pacific Railroad Company, which bore six per cent. interest, and which could only be paid off from the proceeds of the sale of the mortgaged lands. Such of the lands as are still unsold appear in the list of assets of the Improvement Company as "Lands, Western North Dakota and Eastern Montana."

In furtherance of the plan of divesting itself of all outside properties not directly used for the operation of the railroad and vesting them in the Improvement Company, the Railway Company, in July, 1899, sold all of its coal properties to the Improvement Company; said properties at that time being located at Roslyn, Wash., Timberline, Mont., Bull Mountain, Mont., and in Stark County, N. D. The Improvement Company has since acquired by purchase from various parties additional property at Roslyn, Wash., and has also made a lease of some coal lands at Clealum, Wash.; it acquired from the Seattle & San Francisco Railway & Navigation Co. the coal property at Ravensdale, Wash., and supplemented the property so purchased by purchasing from the Railway Company some of its land grant lands now a part of the Ravensdale coal field; it purchased from the Railway Company the lands constituting the Melmont, Wash., coal property, which were a part of the Railway Company's land grant; it purchased from the Union Pacific Coal Company, Chestnut Coal Company, Bozeman Coal Company, Mountainside Coal Company, Northern Pacific Railway Company, and various other parties, the property which now constitutes its Chestnut and Timberline coal properties; the principal part of its Red Lodge and Bear Creek coal properties was acquired by the purchase of the Rocky Fork Coal Company, which purchase has been supplemented by purchases made from various other parties since. A detailed statement of the various coal properties owned by the Improvement Company would be voluminous because of the large number of different purchases made, would require some time for its preparation, and would have to be made up from the records of the comptroller's office at Tacoma, Washington; it would take perhaps two months to prepare, as it would involve the examination of the records of every purchase. These properties appear in the list of assets of the Improvement Company under the heading of "Coal Properties."

Another of the large transactions of the Improvement Company was the purchase from the Railway Company of 103,194.35 acres of coal lands, or supposed coal lands, in the State of Washington. The sale included all lands known to contain coal, also all lands in their vicinity, and undoubtedly a considerable portion of them will prove to be valueless as coal property, when explored. The portion of these lands not disposed of appear in the list of assets of the Improvement Company under the heading of "Lands, Western Washington."

Still another important transaction was the acquisition by the Improvement Company of the land grant property of the St. Paul & Duluth Railroad Company. When the property of the St. Paul & Duluth Railroad Company was purchased by the Northern Pacific Railway Company, the unsold portion of the land grant of the Duluth Company was bought by the Improvement Company, and it deposited as security for the purchase price with the trustee of the St. Paul-Duluth Division mortgage $4,000,000 of the debenture bonds of the Improvement Company. These bonds are redeemed and cancelled from time to time as payments are made to the trustee of the St. Paul-Duluth Division mortgage of the net proceeds from the sale of the lands. The amount so redeemed up to March 31, 1909, was $2.701,859.43, leaving still to be redeemed $1,298,-140.57. This item appears in the list of assets of the Improvement Company under the title "Lands in Northern Minnesota," and the amount of the unredeemed debenture bonds referred to is included in the amount of debenture bonds outstanding.

May 5, 1909.

Statement of Assets of the Northwestern Improvement Company as Shown by Its Books March 31, 1909.

Real Estate, Excepting Coal Properties	Book Value.
42,605.05 acres of lands in Northern Minnesota,	$1,312,740.42
1,519,060.79 acres lands in Western North Dakota and Eastern Montana,	285,710.28
99,058 acres lands in Western Washington,	528,333.23
320.71 acres in Coos County, Oregon,	2,560.00
Town Lots in St. Paul,	121,500.30
Town Lots in Minneapolis,	131,678.15
Town Lots and water front property at Superior,	240,014.75
31,214.04 acres on Cuyuna Range, in Crow Wing County, Minn., owned or leased,	395,255.80
Townsite, dwellings and boarding house at Paradise, Mont.,	75,166.79

Townsite, dwelling houses and boarding house at Laurel, Mont.,	67,391.06
Townsite and dwelling houses at Dilworth, Minn.,	23,014.79
Townsite at Manitoba Junction, Minn.,	886.31
Land for Townsite at Turah, Mont.,	9,188.34
Town Lots and unplatted property at Tacoma, Wash.,	125,390.66
Town Lots at Portland, Oregon,	18,073.94
Tide Lands, Seattle, Wash.,	26,231.40
Water Power at Sunset Falls, Wash.,	10,082.33
Water power at Yellowstone River, Mont.,	7,225.00
Warehouse on Block 186, Seattle, Wash.,	163,597.56
Dwelling houses at Pasco, Wash.,	43,843.15
Townsite at Gwyther, North Dakota,	1,002.50
Total,	$3,591,886.76

Coal Properties.

Mines in Operation.	Book Value.
Roslyn and Clealum, Washington,	$1,276,248.33
Ravensdale, Washington,	992,410.67
Melmont, Washington,	272,913.40
Chestnut and Mountainside, Montana,	553,097.53
Red Lodge, Montana,	1,342,468.68
Coal Bunkers, Seattle, Washington,	62,068.10
Fuel Briquetting Plant, Tacoma, Washington,	29,072.56
Material and supplies, coal department,	341,869.63
(Coal Lands.)	
Bear Creek District, Mont.,	103,669.02
Bull Mountain District, Mont.,	251,405.38
Livingston-Timberline District, Montana,	142,141.23
Lignite District, North Dakota,	2,740.44
Total,	$5,370,104.97

Securities Owned.

	Par Value.	Book Value.
18,496 shares Northern Pacific Ry. Co. Stock,	$1,849,600.00	$2,633,877.91
30,000 shares Port Townsend Southern R. R. Co. Stock,	3,000,000.00	350,000.00
Do Bonds,	912,000.00	
20,000 shares Port Angeles and Peninsular Ry. Co., Stock,	2,000,000.00	35,000.00
40,000 shares Port Angeles and Olympia Ry. Co., Stock,	4,000,000.00	

620 shares Minnesota Transfer Ry. Co., Stock,	62,000.00	62,000.00
100 shares Northern Express Co., Stock,	10,000.00	10,000.00
1,193-2/3 shares Consolidated Land Co., Common Stock,	119,366.67	71,580.00
622 shares Montana Coal & Iron Co., Stock,	62,200.00	13,000.00
City of Ashland, Wis., Bonds,	2,300.00	2,300.00
Tacoma Hotel Co. 2nd Mort. Bonds,	5,000.00	5,000.00
Total,		$3,182,757.91
Accounts Receivable, (Less accounts payable),		$484,805.03
Cash,		842,619.26
Total,		$1,127,424.29

Summary.

	Book Value.
Real Estate, excepting Coal Properties,	$3,591,886.76
Coal Properties,	5,370,104.97
Securities Owned,	3,182,757.91
Accounts receivable, (Less accounts Payable) and Cash,	1,127,424.29
Grand Total,	$13,272,173.93

St. Paul, Minn., May 4, 1909.

Q. I will now show you Exhibit No. 30, Elliott, which purports to be a statement of the dividends paid by the Northwestern Improvement Company since September 1, 1896. That you, understand to be a statement of the dividends paid by that company, as shown by its books?

A. That statement represents the cash disbursements made by the Northwestern Improvement Company since September 1, 1896, as a dividend on its capital stock, except that the so-called extra dividend which was a cash disbursement was not paid direct to the stockholders of the Northwestern Improvement Company; so technically I suppose it might not be called a dividend to the Northwestern Improvement Company stockholders, but a distribution of its assets.

Q. That dividend, the seventeen-million-dollar dividend, the last dividend shown on the sheet, was paid directly to the stockholders of the Northern Pacific Railway Company?

A. Yes, sir.

Q. But, at any rate, that shows the only moneys paid out

or distributed to the owners of the property by the Northwestern Improvement Company?

A. Other than the interest on the bonds which was paid right along.

The statement is as follows:

Dividends Paid by Northwestern Improvement Company Since September 1, 1896.

Year ending June 30, 1901, 5-1/2 per cent. on $2,775,000 capital stock	$ 152,625.00
Year ending June 30, 1904, 10 per cent. on $2,775,000 capital stock	277,500.00
Year ending June 30, 1905, 10 per cent. on $2,775,000 capital stock	277,500.00
Year ending June 30, 1906, 2½ per cent. on $2,775,000 capital stock	69,375.00
	777,000.00
Dec. 3, 1908, extra dividend	17,453,000.00
	$18,230,000.00

St. Paul, Minn., Nov. 23, 1909.

Northern Pacific Ry. Co.

Statement

Office of Comptroller.

Q. Mr. Elliott, when you testified in this case in the spring of this year, you were asked by Mr. Teal questions regarding the increased facilities for the handling of traffic by railway companies during recent years, and among other questions the following was asked of you, and you gave this answer, appearing on page 754 of the testimony taken at St. Paul, April 26 and 27: "In other words, in every element that goes to make up operating, your ability to perform the same serivce today for less money than you could in 1898, is apparent throughout the system, isn't it." and you answered, "Yes, sir." Did you mean by that that there had been a reduction in all of the items of expense connected with the operation of a railroad?

A. No, sir. As I recollect that testimony, that question came after some discussion of the work that had been done on the Northern Pacific in making a more efficient piece of machinery of it, and it is correct that it is a more efficient piece of machinery. I either misunderstood the tenor of the question, or obviously made a mistake in answering yes, that

all items were better than they were before, because it is a well-known fact that labor and material have gone up to a very marked extent in the last ten or twelve years.

Q. Take for example, the item of taxes: how about those? Have those gone up?

A. Taxes on the Northern Pacific in ten years have gone up from something like $650,000 to $2,400,000. The taxes per mile of the railroads in the United States, my recollection is, have been increased from about $225 a mile to $353 per mile—over a fifty per cent. increase in taxes alone.

Q. So that out of every dollar of gross revenue of the company, Mr. Elliott, is the amount that it is now actually necessary to disburse payment of the expenses greater or less than it was ten years ago?

A. It is considerably greater. The economies that our company, in common with others, has been able to introduce through reduction in grades and improvement in equipment and the elimination of physical obstacles have enabled us to move a constantly increasing commerce of the country, but these economies do not seem to have had the effect of overcoming the increase in the unit cost of wages, material and the necessarily increasing demands of the public for service as the country grows older and expects better and better things; and, in the case of the Northern Pacific, it is illustrated in a rough way by the fact that in 1898, which was the first full year after the reorganized company got going, out of all the collections the company made in the shape of earnings it took 50.16 cents for operating expenses and taxes.

Q. Out of every dollar?

A. Out of every dollar. Out of every dollar collected, the year ending June 30, 1909, it took 59.26 cents I think, for the same purpose.

Mr. Teal: What year was that?

The Witness: June 30, 1909. That is, operating expenses and taxes. You will find it on the first page of that report, Mr. Teal; showing that, in spite of all that we have done to reduce our cost and serve the public by giving more transportation, it has taken more of the dollar of collections to provide that service than it did ten years ago.

By Mr. Dillard:

Q. Mr. Elliott, a very careful examination which we made on the Union Pacific, running through several years, and taking the reports of the Department of Commerce and Labor, showing the increased cost of material and labor, and

also an examination of the actual cost of labor and material used by us on our own road, showed that it now costs us a little more to move a ton of freight one mile than it cost us ten years ago; that the economies which have made for the reduction of freight rates have been overbalanced by the increased cost of those things which were necessary for the operation of a railway. Did you not extend your examination far enough, or do you know from your knowledge outside of any examination made by you with regard to this particular case, whether or not that is not true on your line?

A. We have made no detailed figures of the character that you speak of, comparing theoretical cost of moving a ton of freight one mile 1898 with 1908, but looking at it in a broad way, the final result of our operations shows that we are using over 59 cents on the dollar to operate the property and pay taxes on it, where ten years ago we were using a little over 50 cents on the dollar. That necessarily would mean, I should think, that it was costing more to handle the freight.

Q. That recognizes, of course, that there are certain expenses which you can not allocate, and for any one year to show what would be the cost of the movement of a ton of freight would be utterly impossible, but by running it through a large series of years and taking the same arbitrary figures, allocating general expenses to passenger and freight respectively on the question of revenue, we found what I have stated to you. Of course, for any one year that would not do at all, but by keeping the same arbitrary quantity which would be represented by the algebraic character "X", and running it entirely through we arrived at that conclusion.

Mr. Teal: I do not wish to offend Mr. Dillard. With any other witness I would object, but I wish it known that I object to this manner of testifying and examining the witness at the same time, telling what was done in some other case and telling what was not done. I do not think that is any way to examine a witness.

Mr. Dillard: No offense. Just simply a question of opinion.

Cross-Examination.

By Mr. Teal:

Q. Mr. Elliott, don't you think there is some fallacy in this figuring that it is costing more to operate today than it cost formerly, as a net result to the railroads?

A. No, sir.

Q. Don't you think that those figures are being worked a little bit?

A. I cannot speak for other railroads than our own, but I know that ours are not being worked.

Q. In 1897, I notice that your percentage of operating expenses to earnings happened to be that year 76.73 per cent. Do you remember anything about that in 1897?

A. That was the first half year after the receivership, when the property had just got started.

Q. Now, in 1907, the Commission changed its rules as to the method of making up operating expense accounts. That increased apparently the expense account, did it not?

A. No, sir; I think on our road it decreased it, if anything, because their tendency was to try to get everything that was not strictly operating expenses charged either to income or capital account, and our road was charging more or less to operating that under a very strict rule might have been charged to capital or to income.

Q. What would you say is the test, from a money standpoint, as the result of the operations of a railroad as to its being successful or otherwise? would it be the income per train mile?

A. The test, in my judgment, is the same as the test in any other business, whether you have kept them up in suitable condition and paid your debts and had something over for profit.

Q. That is true, of course, but that you have already testified the Northern Pacific has done. What I am getting at is, amongst these units that are used by the railways, what particular unit do you say would be the test which would show the result of operation best?

A. I don't think you can take any one particular unit, because there are so many elements that come in. Now, the net earnings per train mile is a very common unit that is used and a very useful unit, but the net earnings per train mile depends very largely on your average rate. One railroad might make a low net earnings per train mile, and another one a high rate net earnings per train mile, and you would say that the second road is more efficient and more desirable than the first; yet when you came to analyze it you might find that the efficiency was all due to a higher rate. You have got to take a lot of things into consideration.

Q. Do you know of any test that could be applied to a railroad with which you are familiar that, if applied to the North-

ern Pacific Railway Company, other than this qustion of wages and the question of the cost of material, does not indicate increased efficiency of service and increased earning capacity for the last year or two. (I am not speaking of any particular period) over the situation at the time the Northern Pacific Railroad was organized, and if so, state what it is.

A. Well, that is a pretty long question. Can you have it read over?

The question was read.

Mr. Donnelly: Are you trying to determine now, Mr. Teal, as to whether the earnings per train mile are not greater now than they were in 1897 and 1898?

Question read.

A. I don't know of any test, Mr. Teal, that I can apply, especially if you eliminate the two most important items in the problem, in the wages and material. I am bound to admit, as a small owner in the Northern Pacific and as one of its officers, that it is a better piece of machinery than it was ten years ago.

Q. Well, I will ask you, then, this: if your net returns, per mile of road, are not much greater now than they were ten years ago?

A. Yes, sir.

Q. I will ask you if those net returns have not been constantly increasing. When I say constantly, I mean with slight variations, possibly.

A. I should say, in a general way, that there has been a steady increase with the growth of the country.

Q. I will ask you if during that same period your car capacity has not increased?

A. The freight car capacity?

Q. The freight car capacity.

A. Yes, sir.

Q. And if you are not hauling very much larger trainloads of freight than you were then.

A. Yes, sir.

Q. And if the crew that is on a trainload, handling a train, does not handle today more tonnage, the same crew, than it did then?

A. Yes, sir.

Q. And I will ask you if your engine capacity has not largely increased?

A. Yes, sir, it has increased.

Q. And is it true, as it is on the Great Northern, that such

types of engine as the Mallet type, haul very much heavier loads with less coal consumption than the engines that were formerly in use?

A. Less coal consumption what—per day or—

Q. Well, I suppose on ton capacity; I suppose that is the way you use it.

A. Well, I could not say as to that; as to how the engines today compare with ten years ago. We think we have improved on our fuel consumption, but our total fuel cost is a great deal more than it was ten years ago—a great deal more.

Q. The engines in use today have much larger traction power than they had ten years ago?

A. Very much.

Q. And there is one fireman and one engineer on each engine today, as there always was?

A. Yes, sir.

Q. So that, as a matter of fact, a train crew today, notwithstanding you may be paying them more wages, will be handling more tonnage on a train than they did ten years ago, will they not?

A. Sometimes; not all the time.

Q. Generally speaking they will, will they not?

A. No, sir, not all the time. We have a great many branches where the tonnage has not varied at all—very little variation. We have a great many light trains going in one direction with nothing but the way-car and the engine or empty cars and the engine.

Q. Now, these different reports, both of yourself as president and of the gentleman who preceded you in that office, are full of statements of the cutting out of grades, of increased economies in operation or increased resultness of operation, if I can put it that way, of heavier rails, of better roadbed, of heavier trains, of heavier tonnage, for instance, carried over the Cascade mountains, and other items of a like nature. Those statements are all true, are they not, Mr. Elliott?

A. I have tried to make all mine correct. I think they are true—as far as I knew at the time.

Q. As a matter of fact, ten years ago, or shortly after the reorganization, the Northern Pacific Railway Company was not paying dividends, was it?

A. I think it paid a small dividend on the preferred stock, did it not, the first year?

Q. It may have, but I meant paying generally on all of its stock.

A. No, sir, it was not.

Q. Its business, according to this report filed here, its gross receipts has increased in round numbers, from the year 1897 from $15,000,000 to in 1909 $72,600,000; that is correct, isn't it?

A. Well, I assume it is correct. I should say in round figures something like that. I would have to examine the statement to check it up to testify it was absolutely correct.

Q. And you have, of late years, been paying dividends steadily, have you not?

A. Yes, sir.

Q. Now, as a matter of fact, from the railroad standpoint, the investor's standpoint, the operating standpoint, would you want the inference drawn from your testimony that the condition as it existed ten years ago or twelve years ago on the Northern Pacific was better than it is today?

A. No, sir.

Q. In other words, is it not a fact that this question of cost in operation may or may not be a very important one—it always is important, but I mean be very important, conditioned upon the volume of the business?

A. Is that a question?

Q. Yes.

A. Well, can you read that question. I didn't quite catch it all.

Question read.

A. The item of cost in railroad administration is just exactly of the same importance as is the item of cost in any other concern, such as a flour mill or a paper mill; you have got to take it into account all the time.

Q. That is true, but there is a large number of overhead or fixed charges which apply, whether you do much or little business, is there not?

A. Quite a number.

Q. So that these factors that we are speaking of that have increased in cost during this latter period by no means cover all of the cost of operation of a railroad, do they, including fixed charges?

A. Labor and material and taxes are all fixed charges and cover substantially all of the expenses.

Q. Have your fixed charges increased?

A. Our fixed charges have not increased very materially

except in taxes; they have gone up about four times, I think. The fixed charges have increased somewhat as we have issued bonds to make additions to the property. That could easily be checked up from the books.

Q. To what extent does the average loading of a car enter into the profit of a haul?

A. How is that, please?

Q. To what extent does the average loading of a car enter into the profitableness of the operation?

A. Why, it is obvious, if you could load every car to its full capacity in each direction, you would be using your freight car unit to a better extent and making some money out of it. As it is today, our freight car units are only being used about three hours a day. That is the best we can do.

Q. I notice from the report of 1897 that your average ton per loaded car of commercial freight was 10.19; in 1908 it was 18.86. I will see what it is here in 1909 (referring to Northern Pacific annual report.) Do you know what it was in 1909, Mr. Elliott? Do you remember?

(Witness refers to statement in hands of Mr. Teal.)

Q. It was 18.20 for this year, 18.86 for last year. Would not that increase, in itself overcome, to a very large extent or to a considerable extent, increase in wages?

A. It did not.

Q. It did not. Now, then, take the average trainload: to what extent does that enter into the profitableness of operation?

A. The increase in the trainload is a very important thing to the whole country, not only to the railroad. For example, the Northern Pacific, if it had not increased its trainload in the last five or six years, could not have given the service to the public that it has, and that service, even at times has been insufficient for the needs of the country; and, therefore, the increase in the trainload is aimed at all the time, so that we can serve the public by moving their commodities. To a certain extent the increase in the trainload also helps us to reduce the cost of an individual train.

Q. I note that in 1897 your average trainload was 187 tons; while in 1909 it was 434.59 tons. That would indicate very much better operation than in 1897, wouldn't it, Mr. Elliott?

A. Yes, sir; if we hadn't done it, why, there would not have been half the growth of the western coutnry, that there

has been through the investment we have made in order to bring about that very result.

Q. I notice that the freight earnings per train mile in 1897 was $2.14; in 1898 $3.88. Let me see if I can find it here (referring to Northern Pacific report.) Now, then, those figures absolutely show an increased earning on each train mile, do they not, Mr. Elliott?

A. Yes, sir.

Q. Do not these various items that I have read there indicate that, as a matter of fact, the Northern Pacific, as an operating proposition, is a very much more profitable railway than it was in 1897?

A. Why, certainly. Nobody would deny that.

Mr. Donnelly: He has said several times it was.

Q. Mr. Elliott, do you remember what the stock of the Northern Pacific Railway Company was selling for in 1896 and 1897?

A. No, sir.

Q. You don't know whether the common was selling at 4-1/4 then or not?

A. I do not.

Q. Do you know how much Mr. Hill and Mr. Kennedy paid for the stock that they purchased of the Northern Pacific Railway Company (I imagine through that committee) in about 1897 and 1898?

A. I do not.

Q. You don't know whether it was $15 or $16?

A. Never have heard. Never have heard anybody mention it.

Mr. Donnelly: Not knowing what it was, of course, he couldn't know these things, and you are simply suggesting them, Mr. Teal. If you have proof of it, of course—

Mr. Teal: There is proof right in the supreme court of the United States.

Mr. Donnelly: Then introduce it. Now, we object to the leading of the witness and the suggestions of these things.

Mr. Teal: All right.

Q. Now, taking the two months of July and August of 1909, can you say how much the net business of the Northern Pacific has increased over the same two months for 1908?

A. I could not say exactly. It has increased quite a lot.

Q. Without putting it exactly, after making allowances

for taxes and operation expenses, etc., was the net increase in the neighborhood of a million dollars?

A. I should think very likely.

Q. I would like to know whether or not at this time the Northern Pacific is not doing as much business or perhaps more than it ever did in its history for the same months.

A. No, we are just about the same as for some of our heavy Novembers.

Q. You are about at the maximum you ever reached?

A. In a November, yes, just about.

Q. I would like to have you state whether or not the operations of the Northern Pacific are today not profitable.

A. Well, it depends on what your definition of profitable is. I have friends who are in manufacturing enterprises who make sixty and eighty per cent. a year right along, and they think that is fairly good. I have one friend who is in a business that makes a hundred per cent. a year. We are paying seven, and I do not consider that a very profitable enterprise. No one in the states through which we run are willing to put their money into the business. We have scarcely a stockholder west of Minnesota. They can use their money to much better advantage in Montana, Washington and Oregon, than to put in into seven per cent. railroads.

Q. Do you wish to be understood, Mr. Elliott, that seven per cent. is all you are earning?

A. All we are paying to our owners. We are putting the balance of it right into the property.

Q. Haven't you today a surplus of many millions of dollars?

A. Yes, sir.

Q. And if you put the balance of it into the property, is there any difference between that than if I took my profits and put it into some property?

A. There is this difference: that you can put it into fixed property you are risking whether you can earn anything more on it.

Q. Now, Mr. Elliott, you stated what people were earning in certain business in the West and other places—I don't know where it was, and I presume you are qualified to speak of what people make out there in a general way; have you any idea (and I think it has as much to do with the case as your statement), have you any idea what, in the state of Oregon or Washington an estate composed of general proper-

ties of various kinds, sufficiently large to be worth a million or two million dollars, pays to its owners?

A. No, sir; I have merely based my judgment of the situation on this: that I have talked to a great many friends in the West on the idea that it would help the railroad situation if we had some local owners, and every one I have talked to said "Why, Pshaw, we wouldn't put our money into the railroad. We can make more to begin with, with the same amount of money in other pursuits in these states, and besides, we think your investment is a pretty risky one."

Q. Now, then, a pretty fair idea as to what people think of an investment is what a thing can be sold for on the market. Since you are speaking of it in this way, what is Northern Pacific stock worth today?

A. I don't know.

Q. You don't know what it has been worth in the last week?

A. Yes.

Q. How much?

A. About 144, I think. What it is selling for today I don't know.

Q. Then people somewhere are willing to pay a premium for getting that stock?

A. Yes, sir.

Q. Now, to come back to the question that I asked you before, or to change it a little bit, is the operation of the Northern Pacific at the present time as profitable or more profitable than it has ever been?

A. I should not say it was more profitable than it has ever been.

Q. It is just as profitable, is it not, Mr. Elliott?

A. Well, the last three months have been good months, but there are certain conditions now at work that are affecting our business; we don't know to what extent.

Q. For instance, or do you care to speak of it?

A. The great growth of competition. We have got the Milwaukee and St. Paul, it parallels us practically all the way from the Missouri river to the Pacific Coast. They have only just begun to operate, and they are already taking quite large volumes of business from us any place where they are beginning to do business. The Union Pacific is going in at Puget Sound, which will affect our business.

Q. Would you consider that the building of additional railroads and the taking of business, we will say from the

Northern Pacific, would justify you in the maintenance of high rates in order to earn a particular income?

A. I never made that statement.

Q. I say would you?

A. I think the rates through the country as a whole ought to be high enough to maintain the properties in good order and pay a good return to the owners.

Q. That would be regardless of the volume of freight?

A. Yes.

Q. Then the result of that would be that the more railroads the higher the rates, would it not?

A. It might be.

Q. And in your last examination here you stated, if I remember correctly, that you didn't believe in any control of rates excepting that of competition?

A. That is all.

Q. So that the result of your conclusion would be that rates would have to be advanced in order to pay returns on this capital that was put in the new roads, as well as to maintain the capital on the old roads with which they are competing?

A. That is a perfectly possible condition to arise.

Q. Then it would be better, would it not, Mr. Elliott, that new roads be not built?

A. In certain cases it would. That is the reason why, in certain cases, railroads join hands and run trackage one to the other, so as to save an added burden on the public.

Q. Then, Mr. Elliott, if it is only through competition that rates can be fixed, and your idea would be to eliminate competition, then it would just simply leave it to the surviving railroad to fix the rates?

A. I beg pardon, I didn't say anything about eliminating competition. I merely said that one of the things that would affect our earnings was this competition.

Q. In connection with your report of 1907, I would like to have just what this means under the head of "Depreciation of Equipment." "The Equipment Account of the company represents the fair value of all equipment belonging to the company on June 30, 1907, after making full allowance for depreciation in accordance with the principle laid down by the Interstate Commerce Commission; the charge of $5,296,753 is arrived at by computing the depreciation to June 30, 1907, of all equipment owned by the company on September 1, 1896, and purchased and built since then." Does that statement mean that after making that depreciation, that then

your equipment account represented the full value of the equipment carried?

A. We tried to make it that way as nearly as we could figure.

Q. In connection with the Northwestern Improvement Company's properties, a large number of a considerable number of these lands, as I understand it, were lands that were acquired by the company (by the present company) at the time of reorganization; is that correct?

A. By the present railway company?

Q. Yes, sir.

A. Yes, sir, quite a number of them.

Q. And those lands were, amongst the things that represented the capital stock and bonds of the railroad company that were issued at that time?

A. Yes, sir, that is as I understand.

Q. In arriving at the value of the coal lands that the company owns and that were transferred to this Northwestern Improvement Company, how were those figures arrived at, Mr. Elliott?

A. Well, the coal lands, as I recollect it, Mr. Teal, did not come, except in a very few instances, through the land grant of the company. Some of them did, and others were purchased afterwards. How the values were arrived at by those that were transferred from the railway company to the Improvement Company I don't know; it was before I came with the company.

Q. Now, I understood, and if I am mistaken Mr. Donnelly will correct me—I understood from Mr. Cooper that it was their intention to transfer to this company all of the coal lands on which coal was discovered or on which it was suspicioned or believed to exist; is not that about his language?

Mr. Donnelly: I think that is substantially it.

Q. Is that your understanding?

A. No, sir. Mr. Cooper probably didn't understand your question. We have many million acres of land that have lignite coal under it. We do not attempt at all to transfer that coal land to the Northwestern Improvement Company. It is only coal lands that are thought to have bituminous coal under them or very high grade lignite that might be mined at a possible profit, but all over Eastern Montana and parts of Western North Dakota there are many hundred thousands of acres of land with lignite under it which is still in the land grant of the company.

Q. Now, in the Spokane case there were some coal proper-

ties put in there as part of the valuation of the Northern Pacific Railroad Company at $50,000,000. Are those the lands that belong to this company?

A. Yes, sir.

By Mr. Walter:

Q. I understand you to say that for each dollar received you have to pay during the year 1909 about 59 cents and one-tenth.

A. Our annual report shows it; I think it was 59.26, operating expenses and taxes.

Q. So that you have left out of the dollar about 40 cents and a fraction?

A. Yes, sir, about.

Q. During the year 1909, your net earnings bore a much larger percentage to gross receipts than it did to the year 1908, did it not?

Mr. Donnelly: I don't see how that could possibly be.

A. I haven't examined the books. I don't attempt to carry all those figures in my mind.

Q. Your gross receipts were less during 1909 than 1908?

A. I think they were.

Q. And your net earnings were practically two million dollars more?

A. Yes; we made quite a sweeping cut in some of our expenses through apprehension of the future.

Q. So that you were able to save two million dollars more out of the less amount that you took in?

A. If that is the amount, we did it that year, but we postponed certain expenses that we are now going at very vigorously. We are laying 400 miles of rail this coming year.

Q. That is to take care of business that must be accommodated?

A. Well, it is laying existing tracks. We held up, as many railroads did, some of our expenditures during the time of apprehension.

Q. During the year 1908 you were able to save more cents out of each dollar taken in than you have in 1907, and in 1907 more than in 1906?

A. I am quite proud of the fact.

Q. Yes, and I think justly so.

Mr. Dillard: Nothing to be ashamed of.

Mr. Walter: That is right.

By Mr. Donnelly:

Q. Do I understand that the percentage of operating expenses to gross receipts was less in 1908 than in 1907?

A. Well, I think it was, but I am not certain.

Mr. Teal: The net was less for 1908 than 1907.

Mr. Walter: I was speaking as compared with each preceding year.

Mr. Teal: That is what I am speaking of. You are simply mistaken. I will read off the figures if you want them. The operating expenses in 1907 were 54.94; 1908, 58.42, 1909, 55.53.

The Witness: That is, without taxes in each case.

Mr. Teal: Yes, sir, but I am using the same ratio all the time.

By Mr. Walter:

Q. As I understand it, during the year 1909 you were enabled to save out of each dollar that you took in 43.7 cents?

A. No, sir.

Q. 40 cents?

A. Oh, yes.

Q. While your gross receipts were less, your net receipts were greater, during that year?

Mr. Donnelly: During 1908, how many cents were saved out of each dollar that was taken in?

Mr. Walter: That wasn't the query I was putting to him.

Mr. Donnelly: That is the only correct way to get at it, of course. The actual fact is, is it not, Mr. Elliott, that there has been a gradual increase in the percentage which operating expenses bear to gross revenue, if you cut out the year 1909 when these economies had been put in.

The Witness: Yes.

Mr. Donnelly: Or when the reduction of the operating expenses had been put in.

The Witness: I think that is a fair statement. You can easily check it by taking the accounts right from the beginning. The demands of the public are such that a railroad like ours that is trying to respond to them is constantly spending a little more money. We have a little better passenger train service and a little better station, and so on.

Mr. Donnelly: And if you assume, that the relation of the expense of hauling passengers to the expense of hauling freight is the same now as it was in 1896 and 1897, it must follow, must it not, that it actually costs more at the present time to move a ton of freight a mile than it cost in 1897 and 1898?

A. It is my judgment that it does, but I have never been able to make any actual figures that would prove it. I just take it on the broad lines that we have less money left out of all we take in.

By Mr. Teal:

Q. Mr. Elliott, just pardon me one question. Using the basis that Mr. Donnelly did, does it cost more to haul one ton of freight by your road now than it did in 1907? That simply can't be true, can it?

Mr. Dillard: It absolutely can be true.

Q. Very well, we will let the figures go in. I would like to have Mr. Elliott answer that question.

A. I don't see why it can not be true, if I follow your line of thought.

Q. My line of thought is this: that you start out with a heavier carloading; you start out with a heavier trainload, and you start out with greater economy of operation. Now then, if it is costing you more per ton, I am speaking now per ton to move it than it did in 1907, then why should not that result show in your net earnings?

Mr. Holden: Do you mean 1907 or 1897?

Mr. Teal: 1897 and 1909.

A. It does show in our operations, just the gross figure that I gave you, that we could save fifty cents on the dollar in 1897 and forty cents on the dollar in 1909.

By Mr. Wimbish:

Q. Mr. Elliott, I am sincerely desirous of ascertaining, if I can, what factors actually obtain in the making of particular rates, and without desiring to put the question in an offensive form, I want to ask you if practically, in the making of freight rates, of particular rates, they are not made as high as the traffic will bear and move and competitive conditions will admit?

A. Is that the question?

Q. Yes, sir, I ask you that question.

A. In my judgment, railroad freight rates are made exactly the same way as all other prices are made. We take into account a thousand and one items and forces that have to do with the making of a price. It is the old question of a buyer and seller. The seller wants to sell all he can and have something left over to keep up his plant and make some money. The buyer wants to get it, of course, as cheap as he can. The seller in the case of the railroad is the railroad company, and the buyer are thousands and millions of people all over the United States. The railroad endeavors to make its prices, if

it can, so as to expand its business, so as to get a return for its own work and so that the buyer of its transportation will prosper.

Q. I understand, Mr. Elliott. I am not going into any refined theory. I want to get the practical basis, if I can, upon which rates are made, and as I understand you, you make the price as high as the customer can afford to and will pay?

A. No, sir, we do not.

Q. What else do you take into consideration?

A. We take into consideration the welfare of the customer, the very proper desire that the railroad wants to help its country develop in every possible way. If we adopted the principle you speak of—we have a community we will say, at Whitehall, Montana, there is no other railroad there; we could charge five times the rate that we get now on stuff going in there, if we wanted to. We don't do it. We don't charge, in the offensive sense, what the traffic will bear at all. We do charge just as every other sensible business man does. We do arrive at the charge the same as every other sensible business man does—by what Adam Smith calls "haggling" in the market. You go to work and say there is this force, there is that force, and that force over there, and all these forces come together and a price is arrived at.

Q. Then you consider transportation as a commodity to be sold at a fair market price?

A. I think so. It is something that has got to be sold. If you don't sell it you don't do business.

Q. Now, in making a rate, of course, you must regard competition?

A. Certainly; that is one of the forces that we take into account.

Q. You can't make it higher than the traffic will bear and move, so that you must come within these limitations, is that right?

A. Why, certainly.

Q. In making a particular rate, does the traffic mn consider the cost and value of the particular service?

A. He takes that into consideration as two of the important items to consider.

Q. How does he arrive at the cost and value of a particular service?

A. He can't get at it exactly; he takes just such figures as we are talking about today, and knows in a general way it takes sixty cents on the dollar to do the business of the company.

Q. You can ascertain from the ratio of your operating expenses to your income—your gross income from operation—what the average cost of your business is?

A. We publish it.

Q. I say you can ascertain that?

A. We can; anybody can.

Q. You cannot go farther than that, you cannot ascertain the cost of a particular service?

A. I don't think you can get at the actual cost of any one kind of service.

Q. How do you estimate the value of the service to the customer?

A. Just the way I am telling you; that you take into account the delivered prices and everything that you can find that has to deal with the question. Those transactions, millions of them, are going on every day all over the country.

Q. In making a rate does the traffic man sit down and figure out what he thinks is the cost of that service and what he thinks is the value to the customer? Does he make a rate on that basis?

A. Not exactly in dollars and cents. He figures out in his mind all the items he can get at. If he has empty cars, for example, going from St. Paul to Duluth, a constant flow of empty cars, why, he says I can take flour from Minneapolis to Duluth and help expand the Minneapolis flour market and make a price there that is very much less than I could afford to make on flour moving from, we will say, Spokane to Lewiston.

Q. Now let us get down to the rate in this particular case, Mr. Elliott. We will say the rate from coast points ever your line to Minnesota Transfer is 45 cents a hundred pounds.

A. Yes, sir.

Q. In making that rate are you controlled by the fact that the Great Northern and other competitive lines have in a 45-cent rate and by the further fact that a greater rate would be more than that traffic would bear and move over your line, and do you in making that rate consider anything else except those two facts?

A. Why, we try to consider the competition of markets in the east and south; we try to consider the fact that we want our lumber territory to develop. Of course, we must consider what the other road makes, because if we made a higher rate than was in effect from a lumber camp ten miles off from another road, it is obvious our lumbermen would soon be cut out of business.

Q. I mean when you said that you made the rate as high as competitive conditions would admit of that you would take into consideration not only the carrier competition, the parallel line, we might say, or competing lines, but also market competition.

A. Why, of course.

Q. It is perfectly obvious you cannot charge on the commodity a rate so great as to prevent that commodity moving to the market, I have allowed that. But in making this particular rate you find that these competitive conditions will not admit of more than 45 cents per hundred pounds?

A. We thought that they would. We did not find that the Interstate Commorce Commission found it.

Q. You may take fifty cents, I don't care what the rate may be, or any rate you may make; you make it because you think competitive conditions will admit of that and no more?

A. Well,—

Q. Do you ever go into the value of the service to the customer?

A. Sometimes.

Q. And scale that down?

A. We did in the lumber rate case. We felt that the empty haul west was a very vital feature, and when we added it all up togther, it was very dubious whether there was any great return from the lumber hauled itself. There was obviously a return in the development of the counrty.

Q. But at last you made the rate because you thought the traffic would bear it and competitive conditions would admit of it?

A. Those are some of the elements, of course, I still think so, too.

Q. I really want to get from you a fair expression of your opinion as to how those rates are made.

A. Well, I am trying to give it to you.

Q. I know you are.

A. You sit down and you figure a thousand forces that makes these rates, just the same as you make prices with anything else.

Q. Now, at the expense of repetition, won't you then repeat some of these considerations that enter into the making of this lumber rate?

A. Well, there is the competition of markets. There is the question of your empty haul which varies from time to time. There is the volume of the traffic, whether the business is desirable at all; there is the competition of other railroads; there

is the natural desire on the part of any railroad to develop its territory in every way that it can, by not only having the lumbermen propsper, but also having the consumer of lumber prosper, getting all his materials at reasonable prices.

Q. Now, you don't take into consideration the capital stock of your company or the cost and value of your property over its reproduction in making a particular rate, do you?

A. Why, I should hardly say we did in any particular rate. Of course, you have got to consider all the time that your railroad is a going concern, just as anything else is, and if you don't in some way get sufficient money to pay your expenses, taxes and interest, why then you will go into the hands of the sheriff.

Q. You try to make the revenue from the whole body of your rates pay a fair return upon the value of your investment?

A. Yes, sir.

Q. But you do not consider that in making a particular rate?

A. Why, I suppose insensibly you consider it all the time, just as the packing-house man when he sells a can of lard he figures it insensibly. He has got to figure his lard price so as to have it carry a share of the business.

Mr. Dillard: There is a subconscious apprehension of the entire question all the time, isn't there, Mr. Elliott?

The Witness: Why, yes. The packing-house illustration always seemed to me a very good one. Here is an enormous packing house that makes all sorts of things. You can't say exactly what it costs to make one sausage. You can make all sorts of estimates, and Mr. Armour, when he sells one sausage, he doesn't figure out that it is going to carry so much interest and so much taxes and so much traveling expenses, but through the experience in the business the packers have found out how to make their prices, and still have something left over. There are all sorts of forces which enter into the price of the result of the packing-house produce operation; all sorts of forces enter into the result of the price of a railroad freight rate.

Q. Now, when you made this advance to fifty cents a hundred pounds on lumber from coast points to St. Paul, could you have made that any differently if you had thought your property was worth $400,000,000 instead of as you think it is worth exceeding $600,000,000?

A. I don't know what I would have done if I had thought of it. I don't see how I can answer.

Q. Suppose your property was worth, instead of six hundred million, a billion, could you have made the rate higher?

A. How much?

Q. Say a billion, or any amount you choose; could you have made the rate higher, if the Great Northern and the Union Pacific had a fifty-cent rate in?

A. Why, we wouldn't have made it any higher. We want the business to grow with our railroad. We would either have gone out of the business, or we would have made the same rates that other people made.

Q. Regardless of your material?

A. But we might find in time that we could cease to add to our property, cease to add facilities to the conduct of an unremunerative business.

Q. Do you think the order of the Commission establishing the rates in this case is unreasonable?

A. I do.

Q. Wherein do you think it is unreasonable?

A. I think the fifty-cent rate that we are trying to establish was a very reasonable rate.

Q. Why do you think the forty--five-cent rate is unreasonable? Now give me the specific reason why you believe it is unreasonable.

A. Well, it is a rate of nine dollars a ton for about two thousand mile haul, or four mills a ton a mile, and I believe that is an unreasonably low rate for a road like the Northern Pacific.

Q. Any other reason?

A. Well, you asked me to give a reason; that is the chief one.

Q. I would like to know all that you have, Mr. Elliott, why you think that the forty-five-cent rate prescribed by the Commission is unreasonable.

A. Well, I think that is the best reason I can give. For a railroad like ours it is no incentive to us to occupy our tracks and engines indefinitely on such low-rate business, with the advancing prices of everything we have to buy. I believe statistics show that one hundred dollars' worth of freight today buys about sixteen to twenty per cent less commodity than it did ten years ago.

Q. Is there any other reason that you think of?

A. Well, the natural desire on the part of the railroad to make money, of course, that exists with everybody.

Q. Do you think that the order of the Commission is unreasonable because it will confiscate your property?

A. I don't believe the order would necessarily actually confiscate our property. I believe that it is putting a great burden on other things that we may do. In other words, that the lumberman is getting his service unreasonably low.

Q. As compared now with what traffic?

A. Well, with our general run of business. I don't believe that half a cent a ton mile, or four and one-half mills a ton a mile is far below the average rates that our company get, and we are less than any of the roads in other parts of the country west of the Mississippi river.

Q. Then, as I understand you, you think the order is unreasonable because your rate per ton mile is less than you think it should be?

A. That is one of the reasons.

Q. And you think it is unreasonably low as compared with the rate per ton-mile on other traffic?

A. Those are the two reasons.

Q. Are there any others?

A. Well, I gave the natural desire on the part of the railroad to get a little more money for its welfare.

Q. Well, we will add that, the desire on the part of the railroad to earn more revenue. That is all, sir.

Mr. Donnelly: At this time, if your Honor please, the complainants offer in evidence the record of all testimony given before the Interstate Commerce Commission on the hearings in these lumber cases, as the result of which the orders now under attack were made. That order is made for the purpose of substantiating the averment in the complaint to the effect that there was no evidence before the Commission to justify the order actually made.

The Master: That is the entire evidence given by both sides?

Mr. Donnelly: Yes, the entire evidence submitted to the Interstate Commerce Commission at that time, and it will be understood that though the record is not actually present here in the court room at this time, it is all offered in evidence at this time with leave to the Interstate Commerce Commission, the defendant in the case, to withdraw the original record, and that portion of the record which counsel will agree upon will be actually printed in connection with the case. Your Honor will understand that there are various documents in the complete record which while they will be considered in evidence and will actually be in evidence under the offer now made, it will not be considered necessary by either side that they be actually printed, but it will be before the court, and

reference may be made to them by either party and they will all be in evidence in the case under this offer.

The Master: How do you expect the court to consider any of them if he does not know anything about them?

Mr. Donnelly: The entire record, your Honor will understand, is before the court. And included in that record is a large number of documents that were introduced from time to time during the course of the hearing, which, while they are an integral part of the record as it actually exists in the Commission's files, yet counsel on both sides (counsel for the Commission as well as ourselves) and they, of course, can be trusted to see to it that anything having any direct bearing upon the issues here will actually get before the court—they as well as ourselves, I say, will agree that they need not be actually printed and incorporated in the printed record that shall be before the court. So that, for the purposes of its consideration, as to whether there was before the Interstate Commerce Commission evidence justifying the evidence actually made, it need consider only the actual printed record that is in front of it, and anything else that the counsel may think it proper to call attention to and incorporate in their briefs or arguments.

The Master: Well, that means practically that you are going to stipulate what that record was?

Mr. Donnelly: Yes.

Mr. Wimbish: It means we are going to stipulate certain things out of the printed record.

The Master: That are not necessary?

Mr. Wimbish: Yes, but would leave it to counsel on either side to refer to anything before the Commission, whether printed or not.

Mr. Walter: In other words, the original will not be presented to the Master or the Court, but a copy of it.

Mr. Donnelly: In other words, the Court will know judicially anything that is in that record not actually printed on its being brought directly to the court's attention.

The Master: I see; in the argument?

Mr. Donnelly: Yes, in the argument.

Mr. Donnelly: It is further understood that no objection is made to the form of that offer or to the authentication of the record, and whatever legal objection you may have as to it may be made further on, but no objection is made to it because of the documents not being actually present in the court room or not being formally authenticated. And it is further understood that the records are introduced in evidence for the

specific purpose that I have already indicated, to wit, in support of the averment of paragraph 15 of the bill, that there was no evidence before the commission to justify the making of the order complained of, shall also be available to the complainants in support of any other averment in their complaint; that all of that evidence shall be considered as actually in, but that so much of the evidence thus tendered as was actually given on behalf of the lumber men before the association shall not be considered as original evidence offered by the complainants herein in support of their contention, but shall be considered as evidence in the case to the same extent and effect as if introduced by the defendant herein.

Mr. Walter: All the foregoing subject to the original objections made at the beginning of these hearings by the defendants as to the admissibility of any evidence on this hearing.

Mr. Holden: It is stipulated and agreed that the principal operating offices of the Northern Pacific Railway Company and the Great Northern Railway Company are in the city of St. Paul, in the District of Minnesota, 3rd division thereof.

Mr. Teal: In connection with the testimony taken before the Commission, so that there will be no misunderstanding, it is stipulated and agreed that in the trial before the Commission, the Commission and the parties to the cause there had the right to refer to and use any tariffs that were on file with the Commission and that they could also use and refer to any and all annual reports of the carriers on file with the commission as well as reports to stockholders, and it is understood that such references may be made in the briefs of either of the parties hereto.

The Complainants then rested.

Mr. Walter: On behalf of the defendant, not waving in the least any of our objections to the admissibility or sufficiency of the testimony offered on behalf of the complainants, we shall offer certain testimony. That testimony will be directed largely toward the issue made by the introduction of testimony as to the cost of reproduction of the Northern Pacific and Great Northern properties. After the testimony had been offered at our last hearing, the Commission employed Mr. Morgan, who was then with the Minnesota Commission, to make certain investigations to check the testimony as to the cost of reproduction. As many of its employees in the accounting department as could be used in these two offices were sent here under Mr. Morgan's direction. Owing to the fact that the order of the Commission expires within two

years from the time of its effective date, which was October 15, 1908, it was manifestly impossible to investigate and check the entire reproductive statement. We therefore selected certain items and made an investigation, checking it in the best manner we could, and as to those particular items testimony will be offered, but we do not in any wise concede that the remaining items are correct as stated or as furnished in testimony by the complainants. We simply offer this testimony as throwing light on certain particular items and that perhaps that light should be reflected in other items. We may further offer certain tables as to the operating cost on certain lines of railroad, on certain kinds of traffic, but it will be documentary, and our oral testimony will be short. With that statement we will put on the stand, as our first witness, Mr. Morgan. It is now getting along after four o'clock, and we will simply take a short statement from him as to his experience and qualifications as an expert, and not go into the actual figures this evening.

Mr. Teal: It is stipulated that any of the parties to this cause may in their brief and argument refer to the market value of the stocks and bonds of any of the complainant companies as shown by any standard financial publication.

DWIGHT C. MORGAN being duly sworn as a witness on behalf of the defendant, testified as follows:

Direct Examination by Mr. Walter.

Q. What is your full name, Mr. Morgan?
A. Dwight C. Morgan.
Q. What is your business?
A. Civil engineer.
Q. Where do you reside?
A. At the present time I am residing in Kittanning, Pennsylvania.
Q. What is your present employment at Kittanning?
A. I am Vice-president and General Manager of the Pittsburg and Shawmut Railroad.
Q. How long have you been so engaged?
A. Since about the middle of August.
Q. Is that line in operation or in process of construction?
A. It is in process of construction.
Q. Please state to the Master your experience in railroad matters.

A. My education, first, was in the public schools of Bloomington, Illinois, and at Dwight, Illinois, and I afterwards completed my education in the theory of civil engineering at the University of Michigan. My experience in engineering works began in 1887, on the construction of the Ohio River Bridge of the Illinois Central Railway Company at Cairo, Illinois, where I was employed as a rodman and inspector of cement. In 1889 and 1890 I was employed in a similar capacity on the Merchants Bridge, constructed across the Mississippi River at St. Louis. In 1891 I was employed by the Northern Pacific as rodman on the work between Garretson and Helena, and later as draughtsman and instrument man on the line over St. Regis Pass, which was under the immediate charge of Mr. W. L. Darling, who was then assistant engineer and is now the chief engineer of the Northern Pacific System. In 1892 I was employed as assistant engineer of the Southern Pacific, with headquarters at Oakland, California, having duties to perform in connection with maintenance of way, including bridges and buildings. I resigned from this service to assist my father, Richard P. Morgan, in a comprehensive investigation of the railways of California for the railroad commission of that state, reporting to them on what would be just and equitable rates of freights and fares for the railroads of that state. This enquiry involved an examination of all the railways in the state and of the cost conditions entering into their construction, maintenance, and operation. In 1893 I returned to Illinois and was appointed engineer of the Illinois Railroad Commission, with headquarters at Springfield, Illinois. My duties in that capacity required examinations and reports upon the character of the construction and equipment of the railways of Illinois and of the standards of maintenance observed, also supervision over interlocking and signalling apparatus and investigations and reports upon railroad accidents when loss of life resulted. I served in this capacity until 1897, when I was appointed assistant to the chief engineer of the Illinois Central Railroad with headquarters in Chicago. I had charge of the revisions of line and grade in Illinois and Kentucky, and in the winter of 1898 made the surveys and location for a line in the Yazoo Delta in Mississippi. Upon completing the locations, I resigned to enter the service of the Chicago & Alton Railroad, with which latter company I remained until 1901, engaged on special work for the President on signalling and grade and line revisions. I took charge of and managed the Quincy-Carrolton & Western Railroad from the time of its acquisi-

tion by the Chicago & Alton until about the time of its absorption, when I was transferred as engineer of maintenance of way of the Western Division, with headquarters at Kansas City. I had charge of the reconstruction of that division to conform to modern operating conditions. That work involved extensive line and grade changes, new bridges, new buildings, in fact the line was regenerated under my direction. Upon the completion of that work I was appointed assistant engineer of the Chicago, Great Western, with headquarters at St. Paul. I had charge of surveys for new lines and was resident engineer on revisions of old lines. I left the service of the Great Western in 1902 to accept service with the Chicago, St. Paul, Minneapolis & Omaha Railway as assistant engineer in charge of the construction of the new machine shops and terminals at Sioux City, Iowa, where I remained until the work was completed. I was then assigned engineering duties in St. Paul, and when the Wisconsin Railroad Appraisal was undertaken, I was given charge of and carried to completion the cost of reproduction and present value of its properties in that state. I continued in the engineering department until 1904, when I was appointed assistant to the general superintendent of that company, having to do with the details of the operation and maintenance of the system; remaining in that capacity until January 15, 1906, when I was appointed engineer of the Minnesota Railroad & Warehouse Commission, in charge of the valuation of the railways of Minnesota and devoted myself exclusively to that work up to the time I resigned, in the middle of August, upon the completion of the work.

During the period from 1887 to 1906, at intervals, when not actively in the employ of railway companies I assisted my father, Richard P. Morgan, in examinations and reports for underlying interests upon the character and condition of the construction and equipment of railway properties and of their value and earning capacity. This work comprised, among other, the valuation for the United States Government of all of the bond-aided lines of the Union & Central Pacific Railroads and for private parties examinations and reports upon many of the important systems of railway west of the Mississippi River between Canada and Mexico.

Q. When did you first commence the enquiry for the Commission, that is active enquiry in this case?

A. It was about the 23rd or 24th of June.

Q. How large a force worked under your direction in the examination?

A. The forces varied that I had under my direction. When we first started I think we had but two men who were sent here, and then the force was increased. I think the maximum number of men that I had employed here, working under my direction in this work, was twelve, and that varied from time to time. As the work was finished, the men were assigned by the chief accountant to other work, elsewhere.

Q. What records did you investigate?

A. We investigated into the cost of grading, into the cost of ballasting, into the cost of track laying and surfacing, into the cost of ties, besides looking up unit prices paid for various class of material.

Q. Did you go to the construction books of the two companies as far as they were available on certain items?

A. Yes. The construction books of both the Northern Pacific and the Great Northern were made use of; I had access to them, and the railway companies furnished data to us very willingly, as far as they had it, and assisted us in a great many ways in getting the data together.

Q. Did you go back of the construction books to the vouchers, to the detailed information?

A. Yes; we verified the amounts shown in the construction books from the vouchers, as far as it was possible to do so. Of course that was a very laborious task; it involved the handling of a great many vouchers, and there was a great deal of detail about it.

Q. Would you say thousands of vouchers?

A. Yes, thousands of vouchers.

Q. While you were engineering for the railroad commission of Minnesota, state the duties you there performed and the work that you did for the Minnesota Commission.

A. I made detailed examination of all of the railroads in the State upon which to predicate an estimate for reproducing them. That work occupied about three years time. I had employed under me, I think, a maximum of something like 27 or 28 men, and that force varied from time to time according to the circumstances of the work; and I made a personal inspection of all of the lines in the state, went over them and examined them with a corps of engineers and checked the inventories which the railroad companies themselves had submitted, covering all of the physical characteristic of the lines.

Q. Can you state whether you made an actual physical inspection of all the railroad properties in the State?

A. Yes, I did; practically all of them. There were per-

haps some few minor branches that were not covered, but practically all of the mileage in the State was examined.

Q. What can you say as to whether you went over the Minnesota properties of the Great Northern and Northern Pacific Railway Companies?

A. Yes, I did.

Q. Made the valuation of these properties based on the theory of the cost of reproduction so far as they lay within the State of Minnesota?

A. Yes, sir.

And adjournment was here taken until the morning of Wednesday, November 24, 1909, at 10 o'clock.

Room 326 Federal Building,
St. Paul, Minn., November 24, 1909, 10 a. m.

The hearing was resumed before the Special Master, Hon. Frederick N. Dickson, at the above time and place.

Present:

On behalf of the Complainants, Mr. Hale Holden, Mr. Charles Donnelly, Mr. F. C. Dillard.

On behalf of the Defendant, Mr. Luther M. Walter, Mr. W. A. Wimbish, Mr. J. N. Teal.

DWIGHT C. MORGAN was recalled, and his direct examination resumed as follows:

By Mr. Walter:

Q. Mr. Morgan, have you prepared a table as to the Northern Pacific Railway Company showing on the one side the cost of reproduction as prepared by Mr. Darling, and in another column, so far as checked by you certain figures as per that checking?

A. I have.

Mr. Walter: Let that table be offered as defendant's Exhibit 3-Morgan.

The paper was so marked.

DEFENDANT'S EXHIBIT 3 (MORGAN).

TABLE NO. 1.

NORTHERN PACIFIC RAILWAY CO.

COST OF REPRODUCTION AS OF APRIL 12, 1909.

OPERATED MILEAGE.

Main Line	2,819.92 miles
Branches	2,945.79 miles
Second Track	270.01 miles
Spurs	354.34 miles
Yards & Sidings	1,761.50 miles
Total	8,151.56 miles

		DARLING.	MORGAN.
1	Engineering, 3% of Item 2 to 26, inclusive	$ 10,209,081.00	
2	Right of Way, Station Grounds and Terminals on operated lines	114,693,882.25	*22,938,776.00
3	Grading, Clearing and Grubbing	87,713,979.00	
4	Tunnels	4,589,657.50	
5	Bridges, Trestles and Culverts	23,304,893.00	
6	Ties	20,114,438.51	14,725,155.00
7	Rails	37,692,304.76	31,695,791.00
8	Frogs and Switches	1,446,956.59	1,272,900.00
9	Track Fastenings	5,307,036.05	4,694,828.00
10	Ballast	11,129,075.10	8,431,118.00
11	Track Laying and Surfacing	7,499,435.20	5,706,092.00
12	Fencing Right of Way	905,090.00	
13	Crossings and Signs	202,921.00	
14	Interlocking Plants	138,950.00	
15	Signal Apparatus	83,370.00	
16	Telegraph Lines and Appurtenances	1,553,243.65	
17	Telephone Lines and Appurtenances		
18	Station Buildings and Fixtures	3,408,025.00	
19	General Office Buildings and Fixtures	879,983.00	
20	Shops, Engine Houses and Turntables	5,887,583.77	
21	Shop Machinery and Tools	1,383,306.00	
22	Water Stations	2,642,286.90	
23	Fuel Stations	803,215.00	
24	Dock and Wharf Property	4,708,281.00	
25	Miscellaneous Structures	2,882,586.70	

*20% of Reproduction—Approximate Original Cost.

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26 Joint Work at Seattle, Exclusive of cost of Grading and Real Estate.	$ 1,332,199.61	
27 Steam Locomotives	18,567,911.57	
28 Passenger Train Cars	7,480,602.00	
29 Freight Train Cars	36,593,737.00	
30 Miscellaneous Equipment	1,978,710.00	
31 Floating Equipment	612,400.00	
32 Mechanical Engineering, 1% of Items 27 to 31, inclusive	652,333.61	
33 Contingencies to provide for legal Expenses, Superintendence, Organization, Unenumerated items, floods, personal injuries and other unforeseen conditions that might arise during the progress of the work—10% of Items 1 to 32, inclusive	41,639,747.50	5% of Items 1 to 32, Inclusive
34 Interest	164,388,682.09	
	$622,425,904.63	
Lines in Manitoba	7,000,000.00	
Duluth Union Depot, exclusive of Right of way	597,545.00	531,275.00
St. Paul Union Depot, 1/9 Interest	627,837.77	483,800.00
Minnesota Transfer Railway, 1/10 Interest	575,600.00	287,325.00
1/3 Interest in Lake Sup. Trml. and Tfr. Ry. Co	116,725.56	
40% Interest in No. Pac. Trml. Co. of Oregon	2,723,010.40	
Big Fork & International Falls Ry	706,537.53	
Minnesota & International Ry. 70% Interest	3,460,839.62	
Supplies on Hand	5,831,584.21	
Lines unedr construction, including Lake Park-Glyndon, Garrison-Missoula, 2nd track Aubuen-Meeker and Green River Branch Extension	9,019,283.45	
Nor. Pac. 1/3 Interest in S. P. & S. Ry. Vancouver to Portland, under construction	1,500,000.00	
Nor. Pac. 1/2 Interest in S. P. & S. Ry., under construction	27,608,733.51	
Total	$682,193,601.68	

Q. Have you undertaken in any wise to check the mileage of the Northern Pacific System?

A. No, I have not.

Q. Can you say whether the mileage as shown by Mr. Darling is or is not correct?

A. I cannot say, although I have every reason to believe it is correct.

Q. What do you say as to engineering taking three per cent of the items 2 to 26 as used by Mr. Darling, having no reference to the amounts of money shown by those items but merely the name?

A. I think that is a very fair percentage to use.

Q. Taking the second item, Right-of-way, station grounds and terminals on operative lines. I note you have there the amount $22,938,776.

A. Yes. That amount, $22,938,776, is an estimate of the original cost of the right of way of the Northern Pacific now used for railway purposes. It is 20 per cent of the reproduction estimate, being approximately the original cost of the lands to the company.

Q. In connection with that have you prepared any table showing lands purchased and their cost?

A. I have.

Mr. Walter: We offer that table in evidence, and ask that it be marked Defendants' Exhibit 4-Morgan.

The paper was so marked.

DEFENDANT'S EXHIBIT 4 (MORGAN).

TABLE 2.

NORTHERN PACIFIC RAILWAY TERMINAL LANDS (LUMBER RATE CASE.)

Location, Column 1.	Area in Acres Column 2.	Production Cost Column 3.	Original Cost Column 4.
St. Paul, Minn	687.56	$12,156,343.89	$2,493,864.44
Minneapolis, Minn	292.60	5,545,328.93	1,215,369.36
Duluth, Minn	598.72	5,477,377.14	817,994.96
Superior, Wis	*949.12	1,904,577.92	442,546.97
Billings, Mont	§ 92.50	1,378,498.90	Charter R/W and Land Grant
Butte, Mont	110.85	1,248,814.26	50,272.60
Spokane, Wash	422.31	8,109,128.62	51,330.00
Tacoma, Wash	†530.55	11,525,728.89	1,072,654.24
Seattle, Wash	‡432.60	26,814,488.18	2,916,538.43
Portland, Ore	18.38	481,305.00	48,875.42
Totals	4,135.19	$74,641,591.73	$9,109,446.42

§ $63,115.00 N. P.'s valuation on contract for use of 70 acres with Burlington (8-1-1904) N. P. sold to private parties in Billings in 1895, 75.33 acres, in 1909, 2.30 acres, (in all, 77.63) for $5,493.70, or $70.76 per acre. This land adjoins the R/W of the Ry. Co.

† 87.28 acres of said R/W in Tacoma is Charter R/W and Land Grant.

* 117,380 acres, original cost $141,288.76, included, which belongs to the Northwestern Improvement Co., and is not yet (7-2-1909) transferred to the N. P. Ry. Co.

* Includes 341.48 acres of R/W, which is owned 1/2 and 1/2 (undivided with the G. N. Ry.), N. P.'s share only of original cost and reproduction cost shown, though the area should be reduced 170.74 acres, in order that a duplication in area might not be indicated.

‡ N. P. exhibit in Lumber Rate Case shown at $4,939,391.48, is in error, and should be reduced $2,022,853.05 to the figures shown in this statement.

Q. Explain that table, Mr. Morgan, and how it was arrived at.

A. That table was prepared from the records of the company through assistants who were working with me and with a representative from Mr. Cooper's office. It shows, first, under column 1, the name of the city; under column 2, the number of acres of land owned, and in column 3 the reproduction cost

as given by the Northern Pacific Company, and in column 4 the original cost of the same lands.

Q. How did you arrive at that original cost?

A. That original cost is taken from the records. It cannot be stated that it is absolutely correct, but it is as nearly so as Mr. Cooper and his assistants and my assistants could arrive at it, and the records were very carefully examined and gone through to try to get the fact as nearly as possible.

Q. I notice you have ten terminal cities shown.

A. Yes, sir.

Q. What was the aggregate reproduction cost as given by Mr. Darling for the railroad property in those cities?

A. As given by Mr. Cooper, I think.

Q. Mr. Cooper, I should say.

A. Mr. Cooper gave that testimony. It amounted to $74,641,591.73.

Q. What was the original cost as shown by the records?

A. $9,109,446.

Q. How did you arrive at the remainder of the 22 millions cost?

A. Out of the 114 million dollars shown on the reproduction estimate, we have been able to locate $74,641,591.73. The original cost in that case represents about 12 per cent.

Mr. Dillard: Are you speaking of item 2 now, on table 1?

The Witness: Yes. We show as original cost $22,938,776, and we have been able to locate as original cost $9,109,446, as shown on Exhibit 4; so that there is $13,829,330 remaining, which would give an approximate original cost to all of the balance of the lands that we have not located of about 35 per cent. My judgment was that that appeared to be at least a fair estimate of the original cost.

Q. Taking that amount in connection with the actual cost on the 74 million reproductive territory, that gives you an average of 20 per cent?

A. About an average of 20 per cent, yes, or more.

Q. As representing the original investment?

A. As representing the original cost of the land, possibly.

Q. Were you able to determine the amount of lands purchased and also donated to the Northern Pacific?

A. Yes. This statement was prepared for the purpose of showing it.

Mr. Walter: We offer in evidence table 3, to be marked defendant's Exhibit 5-Morgan.

The paper was so marked.

DEFENDANT'S EXHIBIT 5 (MORGAN).

TABLE 3.

NORTHERN PACIFIC RAILWAY (LUMBER RATE CASE.)

	Total Acres Right of Way Column 1.	Acres Purchased Column 2.	Acres Donated Column 3,
Wisconsin	3,454.69	2,919.33	535.36
Minnesota	21,532.88	12,136.34	9,396.49
North Dakota	31,831.76	11,965.95	19,865.81
Montana	51,454.97	9,782.85	41,672.12
Idaho	6,357.74	1,969.70	4,388.04
Washington	36,321.57	11,432.57	24,889.00
Oregon	756.72	756.72	.....
Washington & Columbia Ry	2,733.00	1,822.00	911.00
Port Townsend Southern Ry.	461.16	461.16	.....
Duluth Union Depot & Transfer Co	6.94	6.94	.....
Minnesota & International Ry. (N. P. 70% owner)	1,911.94	1,052.21	859.73
Totals	156,823.32	54,305.77	102,517.55

65.4% of Right of Way Donated.
34.6% of Right of Way Purchased.

Q. Explain that table if you please, and state how it was arrived at.

A. This table was prepared in Mr. Cooper's office and shows in column 1 the total number of acres of right of way devoted to railway purposes, being 156,823.32 acres; in column 2 the number of acres purchased, being 54,305.77; and in column 3, the acres donated or granted, amounting to 102,517.55 acres. That shows in substance that 65.4 per cent of the right of way was donated and about 34.6 of the right of way purchased.

Q. Passing now to item 3 on the original reproductive table, under the item Grading, Clearing and Grubbing. Were you able to make any investigation into the amounts, the quantities shown as having been moved or cleared or grubbed?

A. We made some investigations into that, but we found that the records of the Northern Pacific were very incomplete

in respect to that, and very little satisfaction could be gained in undertaking to analyze.

Q. Were you able to make such an investigation as would enable you to make any correct check on the quantities on the Northern Pacific?

A. Only on some lines.

Q. I am speaking now of the Northern Pacific.

A. Of the Northern Pacific, yes. There was not any appreciable difference in the quantities of earth work as shown on the Northern Pacific exhibit covering the cost of grading work done during the years 1900 to 1909. We did find some clerical errors which would not make a very large difference. Now take the exhibit of the Northern Pacific, which shows the cost of grading on the line from Hoquiam to Moclips. Now the yardage that is shown on that statement by the Northern Pacific represents only that which is handled by the contractors, upon a contract price per yard basis. An examination into the data supporting charges to this work shows that in addition to material handled in yardage, on a yardage basis, the Company was handling dirt with a steam shovel from December 1901 to March 1902 and from August to December 1904; they had a force of men quarrying and placing rip rap from December 1901 to March 1902, from August to December 1904, and March to August 1905, all inclusive, and a force account from December 1901 to August 1905 doing miscellaneous grading work, a part of which was doubtless the handling of material not elsewhere taken into consideration. Also there were a great many payments to contractors for force account work. In the making of cuts and fills, the contractors were Nelson and Bennett, together with H. C. Henry, it was provided that all work not possible to be let to subcontractors should be performed by these general contractors, by force account, and the records show that some of the work on the line was so done. As the records of material handled by the company forces and by the contractors on force account were either not made, or the records have not been preserved, it is impossible to ascertain, as I believe, with correctness, the number of cubic yards of material handled in this work.

Q. Now, so far as the amount of grading, clearing or grubbing necessary to be done on the entire system, to reproduce it, is concerned were you able to make any examination which would throw any light on the figures given by the Northern Pacific?

A. No, none except the examination into the details of the

exhibit; that is all. I have not attempted to put a price on earth work myself; I just made an examination of the exhibits.

Q. Now, about the clearing. What price was shown by the Northern Pacific on the clearing?

A. I believe the Northern Pacific used $82. an acre—$80. or $82.

Q. Get it exactly. (Handing paper to witness.)

A. $80.

Q. Now, you have had experience in that kind of work, have you not?

A. Yes.

Q. What do you say is a fair price for doing that kind of work per acre?

A. Of course, that would vary with the conditions that you encounter. There are, undoubtedly, places on the Northern Pacific where the clearing and grubbing would cost $80. perhaps more than that, where the timber is large and heavy, but there are other places on the Northern Pacific where the clearing would be done for very much less than that. And I am of the opinion, from the investigations that I have made in connection with this entire subject that $50. an acre would be a fair price to use for the clearing, as an average price.

Mr. Dillard: You use clearing as distinguished from grubbing?

The Witness: Yes; just the clearing.

Q. Passing to the item of ties, number 6. Have you prepared any table in regard to that item?

A. I have.

Q. What does that show?

Mr. Walter: First let me offer it in evidence as Defendant's Exhibit 6—Morgan. There are four papers in connection with it. I offer them as Defendant's Exhibit 6-A, B, C and D.

DEFENDANT'S EXHIBIT 6A (MORGAN).

TABLE 4–A.

NORTHERN PACIFIC RY. CO. TIES PURCHASED.
STATEMENT SHOWING AVERAGE COST PER TIE FOR THE YEARS 1903 TO 1908, INCLUSIVE, AND SIX MONTHS 1909.

Class	Number of Ties	Cost, Delivered.	Average Cost per Tie.
Calendar, 1903	2,617,691	$ 812,084.36	31.0
Calendar, 1904	2,437,086	711,968.00	29.2
Calendar, 1905	2,017,208	568,220.36	28.2
Calendar, 1906	2,230,569	748,521.39	33.6
Calendar, 1907	5,176,537	2,304,476.00	44.5
Calendar, 1908	2,556,698	1,123,269.75	43.9
Six months, 1909	2,450,367	885,031.64	36.1
Total	19,486,156	$7,153,571.50	36.7

DEFENDANT'S EXHIBIT 6-B (MORGAN)

TABLE 4 B.

NORTHERN PACIFIC RY. CO.

TIES PURCHASED FOR THE YEARS 1903 TO 1908 AND SIX MONTHS 1909.
STATEMENT SHOWING NUMBER OF TIES PEELED AND TIES UNPEELED, BY CLASSES.

	Ties Peeled.			Ties Unpeeled.			Total.
	Number.	Per Cent. of Class.	Per Cent. of Total.	Number.	Per Cent. of Class.	Per Cent. of Total.	
White Oak	137,842	25.61	.71	400,418	74.39	2.05	538,260
Fir	72,498	1.76	.37	4,050,085	98.24	20.78	4,122,583
White Fir and Pine				694,951	100.00	3.57	694,951
Tamarac	55,730	1.13	.29	4,860,905	98.87	24.95	4,916,635
Red and Yellow Fir and Tamarac	311,758	6.04	1.60	4,851,218	93.96	24.90	5,162,976
Maple				9,945	100.00	.05	9,945
Pine	71,588	8.53	.37	768,031	91.47	3.94	839,619
Red Oak	232	.12	* .00	187,546	99.88	.96	187,778
Hemlock				134,638	100.00	.69	134,638
Jack Pine	10,678	3.99	.05	256,910	96.01	1.32	267,588
Cedar	18,075	.92	.09	1,955,631	99.08	10.04	1,973,706
Spruce				8,946	100.00	.05	8,946
Birch	1,101	.39	.01	277,634	99.61	1.42	278,735
Elm	170	.12	* .00	139,419	99.88	.71	139,589
Ash	20	.02	* .00	112,467	99.98	.58	112,487
Unclassified				93,353	100.00	.48	93,353
Unclassified Culls				4,367	100.00	.02	4,367
Total	679,692	.....	3.49	18,806,464	.....	96.51	19,486,156

*Less than 00.01%.

DEFENDANT'S EXHIBIT 6-C (MORGAN)

TABLE 4-C.

NORTHERN PACIFIC RY. CO.

TIES PURCHASED — STATEMENT SHOWING NUMBER OF TIES DELIVERED ON RIGHT OF WAY FOR THE YEARS 1904 TO 1908, INCLUSIVE, AND SIX MONTHS 1909.

Year. A—Delivered on Right of Way.	Number of Ties.	Cost.	Average Cost per Tie.
Calendar, 1904	1,564,491	$ 440,857.13	28.2
Calendar, 1905	1,086,841	301,383.06	27.7
Calendar, 1906	759,496	230,596.02	30.4
Calendar, 1907	2,009,440	785,508.82	39.1
Calendar, 1908	1,092,164	432,672.99	39.6
Six months, 1909	940,032	308,749.68	32.8
Total	7,452,464	$2,499,767.70	33.5
B—Delivered on Cars.			
Calendar, 1904	872,595	$ 271,110.87	31.1
Calendar, 1905	930,367	266,837.30	28.7
Calendar, 1906	1,471,073	517,925.37	35.2
Calendar, 1907	3,057,132	1,486,187.24	48.6
Calendar, 1908	1,464,534	690,596.76	47.2
Six months, 1909	1,510,335	576,281.96	38.2
Total	9,306,036	$3,808,939.50	40.9
Total Ties Delivered.			
A.	7,452,464	$2,499,767.70	33.5
B.	9,306,036	3,808,939.50	40.9
Grand Total	16,758,500	$6,308,707.20	37.6

Percentage of Ties delivered on Right of Way to total 44.47%.

DEFENDANT'S EXHIBIT 6-D (MORGAN)

TABLE 4-D.

NORTHERN PACIFIC RY. CO.

TIES PURCHASED—STATEMENT SHOWING AVERAGE COST PER TIE BY CLASSES FOR THE YEARS 1903 TO 1908, INCLUSIVE, AND SIX MONTHS, 1909

		Number of Ties	Cost Delivered	Average Cost per Tie
White Oak	Hewed	311,942	$ 161,784.22	51.9
White Oak	Sawed	40,682	18,655.15	45.1
White Oak	Peeled	137,842	61,897.82	44.9
White Oak	Culls	47,794	6,117.41	12.8
Fir	Hewed	74,341	23,498.67	31.6
Fir	Sawed	3,943,637	1,327,270.35	33.7
Fir	Peeled	72,498	21,562.62	29.7
Fir	Culls	32,107	5,644.23	17.6
White Fir and Pine	Hewed	694,951	247,099.73	35.6
Tamarac	Hewed	4,754,984	1,859,263.74	39.1
Tamarac	Sawed	1,581	442.68	28.0
Tamarac	Peeled	55,730	16,587.02	29.8
Tamarac	Culls	104,340	13,674.01	13.1
Red and Yellow Fir and Tamarac	Hewed	4,670,250	1,501,471.49	32.1
Red and Yellow Fir and Tamarac	Sawed	178,390	77,639.99	43.5
Red and Yellow Fir and Tamarac	Peeled	311,758	108,403.17	34.8
Red and Yellow Fir and Tamarac	Culls	2,578	383.18	14.9
Maple	Hewed	9,945	3,434.17	34.5
Pine	Hewed	768,028	279,325.28	36.4
Pine	Peeled	71,588	24,329.40	34.0
Pine	Culls	3	.42	14.0
Red Oak	Hewed	187,221	74,435.07	39.8
Red Oak	Peeled	232	59.70	25.7
Red Oak	Culls	325	142.19	43.7
Hemlock	Hewed	134,638	53,973.20	40.1
Jack Pine	Hewed	255,910	70,722.98	27.6
Jack Pine	Peeled	10,678	2,864.26	26.8
Jack Pine	Culls	1,000	150.00	15.0
Cedar	Hewed	1,955,196	971,947.46	49.7
Cedar	Peeled	18,075	7,274.58	40.2
Cedar	Culls	435	41.17	9.5
Spruce	Hewed	8,946	3,010.44	33.7
Birch	Hewed	277,634	96,058.32	34.6
Birch	Peeled	1,101	353.24	32.1
Elm	Hewed	139,419	47,008.02	33.7
Elm	Peeled	170	38.80	22.8
Ash	Hewed	112,467	37,867.89	33.7
Ash	Peeled	20	7.09	35.4
Unclassified	Hewed	93,217	28,701.96	30.8
Unclassified	Sawed	136	61.20	45.0
Unclassified Culls	Hewed	4,367	369.18	8.4
Total		19,486,156	$7,153,571.50	36.7

Q. Now if you will just take those tables, Mr. Morgan and state how you arrived at their contents and what they are intended to show?

A. The first table shows the ties purchased on the Northern Pacific Railway and the average cost per tie for the years 1903 to 1908 and six months of 1909, which we were able to get up to the time of the completion of our investigation. It shows that during that period, 1903, to and including the first six months of 1909 (inclusive) that the Northern Pacific purchased 19,486,156 ties. The cost, delivered, was $7,153,-571.50, or an average price of 36.7 cents per tie.

Q. Table Exhibit 6-B.

A. Table 6-B shows the different classes of ties and the per cent. of ties peeled and unpeeled, showing that about 96-1/2 per cent. of the ties were unpeeled.

Mr. Donnelly: What table are you referring to now?

The Witness: That is the second one, Defendant's Exhibit B.

Q. Now as to table Exhibit 6-C.

A. That shows the manner of the delivery of the ties, whether delivered on the right of way and the cost per tie, and those delivered on cars and the cost per tie; showing a summary of both classes and the average price. The percentage of ties delivered on the right of way was 44.47 per cent. of all the ties received.

Q. Table 6-D.

A. Table 6-D shows the details of the different classes of ties and the number purchased, whether they were hewed or sawed, and the cost delivered, and the average price of each class of tie, also giving the summary again of the average cost of 36.7 cents.

Q. From those figures and from your knowledge of ties were you able to make an approximate estimate of the cost of ties, taking the quantity used by the Northern Pacific in their estimate?

A. Yes, I did.

Q. State what you did and the result.

A. I did not take the average price of ties as shown on that statement, but I took the cost of ties in 1908, which I think, with the exception of 1907, is the highest price paid for cross ties, the highest average price, and used as a base 44 cents; it was 43.9, but I used 44 cents as a base, and then I added to that 1 cent for loading and handling for each and all of the ties. Now we find from the records that about 56

per cent. was delivered on cars, so that is really equivalent to about two cents a tie for all of the ties.

Q. That were really handled?

A. That were really handled. Peeling was allowed at 1-1/2 cents per tie, and the transportation and average haul of 200 miles, as given in Mr. Darling's estimate, but I have used there 6/10 of a cent a ton a mile instead of the full tariff rates.

Q. State why you used that 6/10 of a cent or six mills per ton per mile.

A. I believed that would cover the cost of transportation.

Q. Did you make any inquiry into the per ton mile rates generally on the system and the ratio which lumber ordinarily would take or should take?

A. I only made it in a very general way—that the average revenue per ton per mile on the Northern Pacific is approximately 8-1/2 mills; that assuming that the relation between the cost of operating freight trains and passenger trains was the same, not attempting to separate them but using the statistics of the Interstate Commerce Commission, that the cost of conducting transportation was approximately 55 per cent. for maintenance of way, maintenance of equipment, conducting transportation and general expenses, the cost per ton per mile would be approximately 4.5 mills.

Q. Which is considerable less than the amount—

A. For an average of all classes of freight. Of course this is a low grade of freight, and handled in carload lots, and it seemed to me that 6/10 per ton per mile would be a fair price to use.

Q. What does that give as a unit price upon ties?

A. That gives a unit price to apply here of 58 cents.

Q. And based on the number of ties which Mr. Darling thinks would be necessary to reproduce the system, what does it give as a total tie cost?

A. $14,725,155.

Q. You made similar calculations for switch ties and crossing ties?

A. Yes; I think the price used on those was the same with the exception that the rate was reduced from full tariff rates to 6/10 of a cent a ton per mile.

Q. Passing to item 7—rails.

A. The same price was used on rails. The difference shown in that statement was due entirely to the change in the rate to 6/10 of a cent per ton a mile.

Q. What has been the custom of the Northern Pacific prior to the last two or three years as to freight transportation cost on its own supplies?

A. Such records as we could find in the offices of the Northern Pacific showed that they were charging 5 mills a ton a mile for all classes of construction material and contractors' outfit; then that was changed to full tariff rates.

Q. Have you some copies taken from the records of correspondence on that subject?

A. Yes, I have some letters here in respect to that.

Q. How late do you find the arbitrary allowance of 5 mills continued instead of the actual tariff rates charged to the public generally?

A. As late as 1903, I think.

Q. When was the allowance to tariff rates first put into effect by the Company?

A. I can't give you the exact date of that.

Mr. Donnelly: There is no question that that is the fact—that it was the custom to so charge.

Mr. Walter: Until recent years?

Mr. Donnelly: Until recent years.

Q. As to frogs and switches in item 8, track fastenings in item 9, I notice a different amount from that shown by Mr. Darling's estimate. To what is that due?

A. That is due to the 6/10 of a cent per ton per mile.

Q. Instead of tariff rates you take the 6 mills per ton per mile?

A. Yes.

Q. As to item 10,—ballast.

A. That is due to a difference in the price of ballasting. My judgment in regard to that is that the average cost of ballasting ought not to exceed 50 cents a yard in place.

Q. Upon what is that judgment based?

A. It is based upon the elements of cost which properly ought to enter into ballasting. It is based upon a great many estimates that I have received in regard to ballasting on different lines, and there is no distinction made by the Northern Pacific in the cost of ballasting in Minnesota and for the entire system. The unit price is the same. Of course the illustrations that have been given by the Northern Pacific as to the cost of ballasting cover small pieces of work in some cases, and in others to some extent; but where you start in ballasting lines, the equipment that you require for a small job and the charges for getting it there and getting your

organization would be proportionately greater than if you were undertaking a large piece of work. Therefore I think that 50 cents a yard would be a fair price for the ballasting.

Q. And upon that basis of 50 cents per cubic yard as against what by the Northern Pacific?

A. I think they use 66 cents.

Q. Do you make any difference in the freight charged for men and materials and supplies moved in the ballasting?

A. I have not gone into the details of that feature of it, to analyze that.

Q. Were the records of the Northern Pacific as to these various items in such condition that you could make an exact investigation?

A. Not with satisfaction because the accounts were not carried as they are separated here. They were put together in such way that they had to be arbitrarily taken apart if you got the units of cost, and that is quite a difficult matter and one that would involve not only a great deal of labor, but there would be considerable question of judgment as to what items should properly go in the account.

Q. Passing to item 33—contingencies. If you were going to build a new line, Mr. Morgan, through an unknown country, except as to the surface indications, as usually is the case in projected lines, what allowance would you make and what is usually made?

A. I should make an allowance of 10 per cent.

Q. Is there any difference in that sort of an estimate for a new line and in the socalled reproduction cost of lines like the Northern Pacific and Great Northern?

A. Yes, I think there is.

Q. What difference would you make and why?

A. I would not feel justified in using more than 5 per cent. as a contingency item there because you are making an investigation of an already existing line and in the presence of all of the conditions which exist on the property and which did exist during the time of construction, many of which would be known historically by those connected with the company; and I think that where you can ascertain, as you undoubtedly can, a great many of the uncertain elements, that 5 per cent. is all that would be justified as a contingency charge.

Q. That is to say, where you have the information as to where the quicksand is, where the slides occur, where the accidents occur, have been encountered and paid for in the

actual building of the line, you should not allow 10 per cent. on those items?

A. To illustrate that a little further: Starting out to make an estimate on a new line to be constructed, the surveys are hurriedly made, the classification of material is unknown to a certain extent, the number of cubic yards of masonry that would be required in bridge foundations would be unknown, and you would have to make liberal allowances for items of that kind. When you come to make an estimate on reproduction all of these things are known, the quantities are there, and you can get at them exactly; you know just what has been done, and therefore, you are not working so much in the dark as you would be to go on into a new country, to reproduce something where you knew nothing of the conditions that you would encounter.

Q. That 5 per cent. allowance, then, for contingencies would be liberal enough?

A. I believe it would be a fair allowance.

Q. Now, passing to the question of interest. What is the average interest bearing rate of the outstanding obligations of the Northern Pacific system, if you have made an investigation and calculation?

A. I looked up the record of the securities published in the statistics of the Intersfate Commerce Commission and the rates of interest and, not including the C., B. & Q. joint certificates, the average rate of interest on the outstanding securities, that is, the bonds, is 3.78 per cent.

Q. What time, in your best judgment, would it take to reproduce the Northern Pacific system, using despatch and having all the necessary money—to complete the lines?

A. I believe the line ought to be completed in 8 years time.

Q. You are familiar with the manner of obtaining money and its use in constructing lines?

A. To a certain extent. Of course that is really the business of a financier and not of an engineer.

Q. What proportion of the capital necessary to construct those lines, would, during that entire period, bear interest? In other words, upon what amount, if you knew the amount necessary, should the interest be calculated?

A. I think that a fair base to arrive at would be to say that the capital was fully employed for one-half of the time required to construct the line.

Q. In other words, interest should be computed on the en-

tire amount for half the time, or one-half the capital for all the time?

A. Yes.

Q. Did you make any investigation of the physical value of the Duluth Union Depot, exclusive of right of way in the State of Minnesota, while you were employed by the Minnesota commission?

A. I did.

Q. What is the amount which you think is a fair value for reproduction?

A. $531,275.

Q. Did you make the same or similar examination of the St. Paul Union Depot as to the one-ninth interest owned by the Northern Pacific?

A. Yes, I did.

Q. What amount do you believe to be a fair value?

A. $483,800.

Q. Of the Minnesota Transfer Railway, one-tenth interest, did you make a similar investigation?

A. I did.

Q. And what was the conclusion reached by you?

A. $287,325.

Q. Now, Mr. Morgan, you are familiar with the conditions surrounding traffic in Minnesota, along the lines of the Northern Pacific in a certain degree, are you not?

A. Yes, I know what the conditions are to a certain extent.

Q. What is the prime incentive in an engineer in laying out a projecting line of railway? What is the first thing he wants to achieve in the construction of a road?

A. To get it earning money at the earliest possible moment.

Q. Can you give your opinion, based on your knowledge of conditions in Minnesota and upon the experience of engineers generally in constructing lines, as to whether after a line has been built from Duluth to St. Paul and on out to Fargo, as the Northern Pacific is built, whether that line ought or should earn money over operating expenses—if you are able to give an opinion on that with some intelligence? If not, why, you need not.

A. If we are to proceed upon the theory that a railroad is to be reconstructed or reproduced under the existing conditions, then the counterpart of that theory would be that it would also be possessed of the traffic that it is handling today,

and upon that theory I think that the property would produce more than the operating expenses.

Q. Mr. Morgan, did you read Mr. Elliott's description of the properties of the Northern Pacific Railway, the country through which it runs and the resources along the line of railway?

A. Yes; I read it hastily, but not to give it any very close attention.

Q. In this case, I mean.

A. In this case, yes.

Q. Now, having reference to the kind of railroad which he there described and the resources and the opportunities along that line of railway, could you state whether in your opinion that railroad ought to earn more than operating expenses prior to the time it is turned over from the construction department and is a finished line.

A. Of course I should have to preface that with the statement I made with respect to the lines in Minnesota; that upon the theory it is to be reproduced under the existing conditions and subject to the traffic and business it is now doing, I believe that it would produce more than operating expenses.

Mr. Teal: You preface both of those statements by presuming or assuming that it was produced under existing conditions. Are not the estimates that have been put in—and don't you know that they are—based on existing conditions?

The Witness: They are supposed to be, yes.

Mr. Walter: I understand that is the basis of all of us in the cost of reproduction.

Q. Now, Mr. Morgan, did you make a similar investigation of the Great Northern Railway accounts?

A. I did.

Q. Have you prepared a table for similar items compared with Mr. Hogeland's table?

A. I have.

Mr. Walter: Let that be marked Defendant's Exhibit 7 —Morgan.

DEFENDANT'S EXHIBIT 7 (MORGAN).

(TABLE 1.)

GREAT NORTHERN RAILWAY.

COST OF REPRODUCTION OF THE SYSTEM.

June 30, 1908.

Main Track	6,760.66 miles
Second Track	147.57 miles
Side Tracks	1,620.75 miles
Total all Tracks	8,528.98 miles

		Hogeland.	Morgan.
1	Engineering	$10,153,352.00	
2	Right of Way, Station and Terminal Grounds	87,825,744.00	*21,956,436.00
4	Grading	95,878,362.00	
5	Tunnels	7,656,030.00	
6	Bridges, Trestles and Culverts	19,385,741.00	
7	Ties	20,142,783.00	14,855,331.00
8	Rails	36,577,990.00	34,047,437.00
9	Frogs and Switches	968,030.00	968,030.00
10	Track Fastenings and Other Material	7,864,950.00	7,185,734.00
11	Ballast	10,709,880.00	8,637,000.00
12	Tracklaying and Surfacing	7,927,147.00	5,970,286.00
13	Roadway Tools	172,800.00	
14	Fencing Right of Way	956,415.00	
15	Crossings and Signs	1,800,543.00	
16	Interlocking and Other Signal Apparatus	586,885.00	
17	Telegraph and Telephone Lines	1,879,992.00	
18	Station Buildings and Fixtures	3,985,200.00	
19	General Office Buildings and Fixtures	643,500.00	
20	Shops, Engine Houses and Turntables	4,025,000.00	
21	Shop Machinery and Tools	1,976,016.00	
22	Water Stations	2,886,400.00	
23	Fuel Stations	596,250.00	
24	Grain Elevators	2,275,500.00	
25	Storage Warehouses	34,800.00	
26	Dock and Wharf Property	1,969,300.00	
27	Gas Producing Plants	20,000.00	
28	Miscellaneous Structures	3,071,020.00	
29	Contingencies	16,628,797.00	
	Total Road Items	$348,598,428.00	

		Hogeland	Morgan
30	Steam Locomotives	$16,210,048.00	
31	Passenger Train Cars	5,810,775.00	
32	Freight Train Cars	32,464,727.00	
33	Work Equipment	1,481,772.00	
	Total Equipment Items	$55,967,322.00	
34	Legal, Organization and Other Expenditures	$12,136,972.00	
35	Interest During Construction	93,292,575.00	
	Total General Expenditures	$105,429,547.00	
	SUMMARY.		
	Road	$348,598,428.00	
	Equipment	55,967,322.00	
	General Expenditures	105,429,547.00	
		$509,995,297.00	
36	Stores and Supplies on Hand	8,219,581.00	
37	Lines Under Construction	7,908,002.00	
38	Interest in Terminal Railways	1,302,916.00	
39	Interest in Spokane, Portland and Seattle	21,827,521.00	
	Grand Total	$549,253,317.00	

25% of Reproduction—Approximate Original Cost.

Q. Now, as to the right of way, state what conclusion you reached and upon what basis?

A. The item of right of way is my estimate of the approximate original cost, being 25 per cent. of the reproduction estimate as given. That is based upon an investigation into the original cost.

Q. As shown in table 2?

A. Yes, the original cost as shown from table 2.

Mr. Walter: We here offer that table, to be marked Defendant's Exhibit 8—Morgan.

DEFENDANT'S EXHIBIT 8 (MORGAN).

TABLE NO. 2.

GREAT NORTHERN RAILWAY.
TERMINAL LANDS.
(Lumber Rate Case.)

Location.	Area in Acres.	Reproduction Cost.	Original Cost.
Column 1.	Column 2.	Column 3.	Column 4.
St. Paul, Minn.....	354.12	$8,041,686.00	$1,210,833.37
Minneapolis, Minn...*1*	401.59	14,524,704.00	1,753,253.25
Duluth, Minn.....	27.19	969,152.00	575,200.43
Superior, Wis.....	686.40	1,275,265.00	533,072.63
Spokane, Wash.....	315.68	3,750,000.00	1,124,621.00
Seattle, Wash.....*2*	375.41	24,080,110.00	2,637,565.88
Bellingham, Wash.....	108.00	825,000.00	435,567.81
Everett, Wash.....*3*	250.00	1,500,000.00	437,887.02
Butte, Mont.....	72.00	1,000,000.00	84,475.81
Totals.....	2,590.39	$55,965,917.00	$8,792,477.20

1—Includes Minneapolis Union and Minneapolis Western Rys.

2—Accounting Department records show original cost of lands in Seattle, Washington, as $3,187,565.88, which includes $550,000 expended for filling in Tide Lands, and which filling the Ry. Co. has included under the heading of "Grading" in its Reproduction Estimate. Therefore, Original Cost of Lands in Seattle should be as shown in this statement.

3—From Accounting and Right of Way Department records. Acquired from 1899 to 1908, mostly from 1899 to 1904.

The Witness: An investigation into the records of the Great Northern showed, for the cities named in the table, that the cost of reproduction, according to Mr. Hayden's estimate, is $55,965,917., and the original cost of those same lands was $8,792,477., or about 16 per cent. We have been able to locate definitely $55,965,917. out of the $87,825,744., and the $8,792,477., representing original cost, leaves about $13,163,959, and that amount is about 40 per cent. of the estimated reproduction cost on the balance of the lands that we have not located.

Q. In your judgment, is that $21,956,436. a liberal allowance to cover original cost?

A. I believe it to be a fair allowance on the original cost of the lands.

Q. Why do you take 25 per cent. for the Great Northern as against 20 per cent. for the Northern Pacific?

A. The Northern Pacific benefited in a greater proportion, covering lands donated, than did the Great Northern.

Q. Have you prepared a table showing that?

A. I have.

Mr. Walter: We offer that table in evidence as Defendant's Exhibit 9—Morgan.

DEFENDANT'S EXHIBIT 9 (MORGAN).

TABLE NO. 3.

GREAT NORTHERN RAILWAY.

(Lumber Rate Case.)

	Total Acres Right of Way	Acres Purchased	Acres Donated
	Column 1	Column 2	Column 3
Wisconsin	1,207.03	1,207.03	.....
Minnesota	36,056.32	31,866.67	4,189.65
North Dakota	28,332.32	20,658.66	7,673.66
South Dakota	4,355.18	3,929.77	425.41
Iowa	1,280.46	1,280.46	.....
Montana	32,552.34	19,840.88	12,711.46
Idaho	2,050.00	1,486.58	563.42
Washington	15,848.05	13,955.33	1,890.72
Manitoba	2,514.00	2,514.00	.....
British Columbia	5,084.69	5,084.69	.....
Totals	129,278.39	101,824.07	27,454.32

NOTE.—Lines under construction not taken into account.

21.2% of Right of Way Donated.

78.8% of Right of Way Purchased.

Q. What does that show, Mr. Morgan?

A. That shows that out of a total of 129,278.39 acres the Great Northern purchased 101,824, and there was donated 27,454 acres. That shows that 21.2 per cent. of the right of way was donated and 78.8 purchased.

Q. As against 65.4 donated to the Northern Pacific and 34.6 per cent. purchased by the Northern Pacific?

A. Yes, sir.

Q. Did you make any investigation as to the item of grading on the Great Northern?

A. Yes.

Q. Was that investigation based upon the construction records?

A. Yes.

Q. What did you find as to earth, loose and sold rock and hard pan?

A. We went through the original records of construction on the Great Northern, covering in round numbers seventy-four million cubic yards of earth in excavation, that cost 17.9 cents; 12 million cubic yards of embankment that cost 16 cents per cubic yard; 15,400,000 yards of hard pan that cost 35 cents per cubic yard; 4,800,000 cubic yards of loose rock that cost 41.4 cents per cubic yard, and 10,400,000 cubic yards of solid rock that cost 96.2 cents per cubic yard; making a total of 116,951,222 cubic yards, for which the price paid the contractor was 27.9 cents. We also located the amount of money paid for over haul on the 116 million cubic yards, and adding that it makes a total of 28.92 cents.

Q. On all that material of 116 million cubic yards?

A. 116,951,222 cubic yards.

Q. Do you know what the total of earth, hard pan, loose rock, solid rock, as to quantities shown in the estimate of the Great Northern, was, according to Mr. Hogeland's statement?

A. I do not recall it.

Q. (Handing witness paper.) In round numbers, in millions.

A. Earth, 160,800,000; hard pan, 34,400,000; loose rock, 8,000,000; solid rock, 15,100,000.

Q. Speaking in round numbers—the total of those four would be how many million?

A. About 218 million cubic yards.

Q. Your investigation enables you to locate more than half of the cubic yardage shown on the Great Northern reproduction sheet, 116 out of 218 millions; is that correct?

A. That is right.

Q. That 116 million represented the contractors' work, did it not?

A. It represented the price paid the contractor per yard.

Q. On that quantity moved?

A. Yes.

Q Were you able to locate on that 116 million cubic yards the charge for overhaul?

A. Yes.

Q. What did the records show?

A. They showed that the charge for overhaul was $1,106,-201.29.

Q. How much per cubic yard?

A. Over haul per cubic yard 93/100 of a cent.

Mr. Teal: Do I understand that was from their books and records?

The Witness: That is from their books and records.

Q. Compared with the Northern Pacific, what is the condition of the Great Northern's records covering construction?

A. The Great Northern records are really in very fine condition. They go to great pains in keeping their accounts. Of course it is a matter of spending money. Some lines would not feel justified in doing that; others would.

Q. In that 116 millions what is the average cost per cubic yard of earth, each of the separate items and on the whole?

A. That has already been read into the rocord.

Q. Has it?

A. Yes, sir.

Q. You just gave that?

A. Yes, sir.

Mr. Teal: Pardon me. That was not only contractors' prices, but included all the records you could find as to cost on those items.

The Witness: Oh, no.

Mr. Holden: Now, Mr. Teal, on an average of three times every time we meet you object to my questions as leading. I submit that is the most flagrant leading question I ever heard.

Mr. Teal: I will withdraw that question and put it in another form.

Mr. Holden: Yes, after you have indicated to the witness what you want then you put the question in legal form.

Mr. Teal: What items were included in the result that you reached as to unit cost?

The Witness: That was just the amount of money paid the contractors and does not include any of the extra charges that entered into the cost of grading except the overhaul, which is, as stated 93/100 of a cent.

Mr. Teal: Did you go any further to ascertain what other charges did go into this grading?

The Witnesc: Yes, investigations were made into that, in the exhibits shown there.

Mr. Teal: What was the result of that investigation?

The Witness: I think that the revised table that has been submitted by the Great Northern is substantially correct and conforms to the findings that were made jointly through the men that I had employed there and through Mr. Hogeland's office.

Mr. Holden: You mean by that Exhibit 16 corrected, that was offered by Mr. Hogeland on Monday?

The Witness: Yesterday, yes. I think there are no substantial differences. I think that the correctness on the table show the total charges that appeared in the books.

Mr. Holden: What I had in mind was so as to identify your question on the record. Do you mean to limit your answer to 16 or to 16, 18 and 19? We offered three revised exhibits.

The Witness: Well, it could just as well state 16, 18 and 19 and cover it all.

Q. Now, Mr. Morgan, the 116 millions represented the total amount moved by the contractor; that is all that the contractor moved?

A. That is moved by the contractor.

Q. State whether or not the overheaul of 93/100 of one cent per cubic yard was the overhaul on this 116 millions?

A. That was the overhaul on the 116 millions.

Q. Now, there are certain lines shown on Exhibit 16 as having been built during the years given. Did you check any of the records as to those particular lines?

A. Yes, we checked it in resepct to a number of them.

Q. Give us the result of your investigation as to those lines.

A. The result of the investigation into those lines would not modify the figures as shown in Mr. Hogeland's revised Exhibit 16, if it is proper that all of the book charges shall be considered as representing actual cost. I do not believe that all of the charges which go into construction accounts do represent actual cost. I think that some of them are in excess of what the actual cost would be.

Q. State as to the particular lines what those items are and what your investigation gave.

A. I investigated two lines, first, the line from Columbia Falls to Rexford, taking into account the charges to grading on account of the tariff rates applied to freight and to the transportation of men and material.

Q. What did that show per ton per mile on the freight?

A. The total charges to transportation of men and mate-

rial account amount on that line to $230,275.92. That represents merely the freight charges. We went through the way bills covering all of the material that was shipped over the line, taking the weights off from the way bills, and found that there were moved 6,679,513 tons one mile, and the average charge per ton per mile on that basis was 3.4 cents.

Mr. Holden: Upon what basis?

The Witness: Upon the number of tons moved one mile into the total charges.

Mr. Holden: You mean the actual charges you gave 230 odd thousand?

A. Yes, sir.

Mr. Holden: How much?

A. 3.4 cents.

Q. The construction books show a charge, as I understand it, against each ton of freight hauled one mile, 3.84 cents?

A. 3.4 cents.

Q. 3.4 cents; is that right?

A. Yes, sir. Under the head of "passenger charges" there is charged $322,907.44; the number of passengers carried one mile was 10,984,389, and the average charge per passenger per mile was 2.94 cents. If we take 6/10 of a cent a ton a mile as a base for handling freight and one cent for passengers per mile, being the construction rates, it would make a difference on those lines of 8.8 cents per cubic yard in the price that is finally shown in the last column. The same process was gone through with respect to the line from Curlew to Midway, and in that case we find that the transportation charges over and above 6/10 of a cent a ton a mile and one cent per passenger per mile would amount to 12.3 cents per cubic yard.

Q. Was there any purpose in selecting these two lines to the exclusion of the others? How was the selection made?

A. Not specially. The records are very complete on those lines and they were selected, I might say, haphazard. It was absolutely impossible to undertake to go through them all. It would have been a great satisfaction if it could have been done, but between 70 and 80 thousand way bills were examined to get out even these statistics that we present here. It was a very laborious, tedious task, and it would require a great deal of time to analyze it with respect to all of the lines shown on that exhibit.

Q. I notice in the reproduction estimate for the Great Northern a charge of $82.50 per acre on 31,000 acres of clearing.

A. Yes.

Q. Were you able to locate any of that 31,064 acres?
A. Yes, sir.
Q. How much of it?
A. I located 24,807-1/4 acres.
Q. And what did you find was the average cost of those 24,000 acres?
A. The average contract price for the clearing was $43.57.
Q. What proportion of the total amount of 31,064 acres of clearing deemed necessary by the Great Northern on the entire system were you able to locate? How many acres was that? 31,064?
A. Practically 80 per cent.
Q. In your judgment what would be a fair average cost per acre for clearing 31,064 acres?
A. $50.
Q. As against their price of $82.50?
A. Yes.
Mr. Holden: What is the price you gave?
The Witness: $50 is an average price; some of it more and some of it less.
Q. I believe you have already given the average figures shown on the 116 millions per cubic yard of the various units?
A. Yes.
Q. Now, pass to the item of ties: Did you make any table as to the ties purchased by the Great Northern?
A. Yes.
Mr. Walter: We offer that table in evidence to be marked Defendant's Exhibit 10, Morgan, A. B. C. D and E.
The table was so marked.

DEFENDANT'S EXHIBIT 10A (MORGAN).

TABLE 5-A.

GREAT NORTHERN RY. CO.

TIES PURCHASED. FOR THE YEARS 1902 TO 1908, INCLUSIVE, AND SIX MONTHS OF 1909.

Year.	Number of Ties.	Cost Delivered.	Average Cost per Tie. (Cents)
A. Ties Purchased, excluding Ties for Treating Plant.			
Calendar 1902	1,154,246	$ 321,290.41	27.83
Calendar 1903	1,075,032	361,960.22	33.67
Calendar 1904	2,035,065	694,103.07	34.11
Calendar 1905	1,671,546	549,731.47	33.90
Calendar 1906	1,817,328	654,334.09	36.00
Calendar 1907	2,940,379	1,366,728.12	46.47
Calendar 1908	3,594,483	1,582,356.16	44.02
6 months 1909	1,427,579	524,644.67	36.75
Total	15,715,658	$6,055,148.21	38.53
B. Ties Purchased for Treating Plant.			
Calendar 1902	691,169	$151,921.41	23.427
Calendar 1903	774,382	184,750.66	23.857
Calendar 1904	390,282	102,222.56	26.191
Calendar 1905	161,140	40,582.69	25.185
Calendar 1906	344,537	90,977.86	26.405
Calendar 1907	370,823	134,504.91	36.271
Calendar 1908	380,787	153,044.84	40.192
6 months 1909	124,969	49,674.29	39.749
Total	3,238,089	$ 917,679.22	28.340
TOTAL TIES PURCHASED:			
A	15,715,658	$6,055,148.21	38.53
B	3,238,089	917,679.22	28.340
Total	18,953,747	6,972,827.43	36.788
C. Total Ties purchased including Ties for Treating Plant.			
Calendar 1902	1,845,415	$ 483,211.82	26.18
Calendar 1903	1,849,414	546,710.88	29.56
Calendar 1904	2,425,347	796,325.63	32.83
Calendar 1905	1,832,686	590,314.16	32.21
Calendar 1906	2,161,865	745,311.95	34.48
Calendar 1907	3,311,202	1,501,233.03	45.34
Calendar 1908	3,975,270	1,735,401.00	43.65
6 months 1909	1,552,548	574,318.96	36.99
Grand Total	18,953,747	6,972,827.43	36.788

DEFENDANT'S EXHIBIT 10B (MORGAN).

TABLE 5-B.

GREAT NORTHERN RY. CO.—TIES TREATED.

STATEMENT SHOWING COST OF TREATING TIES FOR THE YEARS 1902 TO 1908 INCLUSIVE AND SIX MONTHS OF 1909.

Year.	Number of Ties Treated	Cost of Treatment	Average Cost per Tie (Cents)	Per Cent of Ties Treated of total Ties Purchased Table 1-C Per Cent
Calendar, 1902.....	650,808	$88,900.37	13.66	35.27
Calendar, 1903.....	808,508	98,880.53	12.23	43.73
Calendar, 1904.....	315,233	43,628.25	13.84	13
Calendar, 1905.....	222,166	42,766.96	19.25	12.06
Calendar, 1906.....	278,815	50,047.29	17.95	12.89
Calendar, 1907.....	227,049	47,771.11	21.04	6.86
Calendar, 1908.....	563,823	90,948.78	16.13	14.18
6 months, 1909.....	137,602	28,208.41	20.50	8.86
	3,204,004	491,151.70	15.33	16.90

AVERAGE COST OF TREATING TIES.

16.90% of 15.33 cents equals 2.59 cents.

DEFENDANT'S EXHIBIT 10C (MORGAN).

TABLE 5-C.

GREAT NORTHERN RY. CO.

TIES PURCHASED FOR THE YEARS 1902 TO 1908, INCLUSIVE, AND SIX MONTHS OF 1909.

STATEMENT SHOWING NUMBER OF TIES PEELED AND TIES UNPEELED, BY CLASSES.

CLASS.	TIES PEELED.			TIES UNPEELED.			
	Number	Per Cent of Class.	Per Cent of Total.	Number.	Per Cent of Class.	Per Cent of Total.	Total.
White Oak	.....	.....	.....	357,466	100.00	1.89	357,466
Pine	2,074	1.08	.01	190,239	98.92	1.00	192,313
Tamarac	331,201	4.20	1.75	7,557,998	95.80	39.86	7,889,199
Fir	.....	.....	.....	122,564	100.00	.65	122,564
Tamarac and Fir	1,377,087	72.52	7.27	1,898,930	27.48	10.02	3,276,017
Cedar	56,349	1.73	.29	3,254,623	98.27	17.17	3,310,972
Cedar and Fir	28,759	4.41	.15	65,222	95.59	.34	93,981
Hemlock and Tamarac	.....	.....	.....	111,241	100.00	xx .58	111,241
Hemlock	.....	.....	.....	250	100.00	.00	250
Tamarac, Fir and Pine	.....	.....	.....	14,200	100.00	.07	14,200
Tamarac, Fir and Cedar	.....	.....	.....	22,013	100.00	.12	22,013
Fir and Pine	.....	.....	.....	57,437	100.00	.31	57,437
Spruce	.....	.....	.....	8,119	100.00	.04	8,119
Elm	.....	.....	.....	13,436	100.00	.08	13,436
Ash	.....	.....	.....	7,516	100.00	.04	7,515
Ash and Elm	.....	.....	.....	16,082	100.00	.08.	16,082
Tamarac and Pine	.....	.....	.....	27,681	100.00	.14	27,681
Birch, Creosoted	.....	.....	.....	10,014	100.00	.05	10,014
Cedar, Tamarac and Fir Culls	.....	.....	.....	20,164	100.00	.11	20,164
Cedar, Tamarac and Pine Culls	.....	.....	.....	23,211	100.00	.13	23,211
Soft Culls	.....	.....	.....	141,783	100.00	.75	141,783
Ties for Treating Plant oo	.....	.....	.....	3,238,089	100.00	17.08	3,238,089
Total	1,795,470	.....	9.47	17,158,277	.....	90.53	18,953,747

xx Less than 00.1%. oo Data by classes not available.

DEFENDANT'S EXHIBIT 10D (MORGAN).

TABLE 5-D.

GREAT NORTHERN RY. CO.

STATEMENT SHOWING NUMBER OF TIES DELIVERED ON RIGHT OF WAY, FOR THE YEARS 1904, 1906, 1907, 1908 AND 6 MONTHS OF 1909.

Year	Number of Ties	Cost	Average Cost per Tie
A. Delivered on right of way.			
Calendar 1904	930,419	$279,386.26	30.03
Calendar 1906	1,281,452	440,845.65	34.37
Calendar 1907	1,060,316	405,133.41	38.21
Calendar 1908	2,254,839	829,452.57	36.79
6 months 1909	1,050,434	365,228.17	34.77
Total	6,577,460	2,319,686.06	35.27
B. Delivered on cars (including ties purchased for treating plant).			
Calendar 1904	1,494,928	516,939.37	34.58
Calendar 1906	880,413	304,826.30	34.62
Calendar 1907	2,250,886	1,096,099.62	48.69
Calendar 1908	1,720,431	905,948.43	52.66
6 months 1909	502,114	209,090.79	41.64
Total	6,848,772	3,032,904.51	44.28
Total ties delivered:			
A.	6,577,460	2,319,686.06	35.27
B.	6,848,772	3,032,904.51	44.28
Grand Total	13,426,232	5,352,590.57	39.87

Percentage of ties delivered on right of way to total: 48.99%.

AVERAGE COST OF TIES:

C. Delivered on cars (excluding ties purchased for treating plant).			
Calendar 1904	1,104,646	$414,716.81	37.54
Calendar 1906	535,876	213,848.44	39.91
Calendar 1907	1,880,063	961,594.71	51.15
Calendar 1908	1,339,844	752,903.59	56.20
6 months 1909	377,145	159,416.50	42.27
Total	5,237,374	2,502,480.05	47.78

DEFENDANT'S EXHIBIT 10E (MORGAN).

TABLE 5-E.

GREAT NORTHERN RY. CO.—TIES PURCHASED.

STATEMENT SHOWING AVERAGE COST BY CLASSES FOR THE YEARS 1902 TO 1908 INCLUSIVE AND SIX MONTHS OF 1909.

CLASS	Number of Ties	Cost Delivered	Average Cost per Tie
White oak, hewed	260,582	$ 119,595.07	45.89c
White oak, hewed and split	305	151.54	49.65
White oak, sawed	73,569	36,023.19	48.95
Mongrel oak	1,209	202.35	16.73
Oak culls	21,781	2,380.73	10.93
Pine, hewed	166,867	65,120.93	39.05
Jack pine, hewed	5,336	1,600.50	30.
Pine, sawed	18,037	6,742.23	37.38
Pine, hewed and peeled	2,074	646.69	31.18
Tamarack, hewed	7,539,710	3,018,419.46	40.03
Tamarack, hewed and peeled	331,201	96,577.94	29.16
Tamarack, culls	18,288	2,123.74	11.61
Fir, hewed	26,992	6,494.98	24.06
Fir, sawed	95,572	25,995.12	27.20
Tamarack and fir, hewed	968,712	284,137.18	28.33
Tamarack and fir, sawed	930,218	390,212.51	41.95
Tamarack and fir, hewed and peeled	1,377,087	453,329.08	32.92
Cedar, hewed	3,175,454	1,342,962.59	42.29
Cedar, hewed and peeled	56,349	17,421.89	30.92
Cedar, hewed and split	12,262	4,291.70	34.
Cedar, sawed	64,362	18,341.76	28.50
Cedar, culls	2,545	232.97	09.15
Cedar and fir, hewed	52,775	15,192.06	28.79
Cedar and fir, hewed and peeled	28,759	7,764.93	27.
Cedar and fir, sawed	12,447	3,485.16	28.
Hemlock and tamarack, hewed	111,241	35,919.54	32.29
Hemlock, hewed	250	81.25	32.5
Tamarack, fir and pine, sawed	14,200	5,220.21	36.76
Tamarack, fir and cedar, sawed	22,013	7,989.31	36.29
Fir and pine, sawed	57,437	20,975.35	36.52
Spruce, hewed	8,119	2,435.70	30.
Elm, hewed	13,436	4,470.97	33.27
Ash, hewed	7,615	2,475.60	32.94
Ash and elm, hewed	16,082	4,668.09	29.02
Tamarack and pine, hewed	27,681	9,695.13	35.02
Birch, creosoted	10,014	6,509.10	65.
Cedar, tamarack and fir, culls	20,164	2,016.40	10.
Cedar, tamarack and pine, culls	23,211	2,322.13	10.
Soft culls	141,763	30,922.83	21.81
	15,715,658	6,055,148.21	38.53
Ties to Treating Plant*	3,238,089	917,679.22	28.34
	18,953,747	6,972,827.43	36.78c

*Classes not available.

Q. Please explain those tables, and explain how you arrived at them?

A. These tables are prepared in the same way as the tables admitted in the case of the Northern Pacific. Table 10-a shows the number of ties purchased between 1902 and 1909, inclusive, showing separately the ties purchased for the tie-treating plant and those which were purchased to go into the line without going to the treating plant. It shows also the total ties purchased, including the ties for the treating plant, at an average cost for the several years mentioned of 36.78 cents. Table 10-B shows the operations of the tie treating plant and the cost of treating ties during the same period.

Q. What would that be per tie on the whole of the ties?

A. It shows this: that during that time 16.9 per cent. of all of the ties purchased had been treated at a cost for each tie, amounting to 15.33 cents, which would be equivalent, in reducing it to all ties on the system, to 2.59 cents. Table 10-C shows the number of ties peeled and unpeeled, of which about 90 per cent. of the ties were unpeeled. Table 10-D shows the number of ties delivered on right of way, the number of ties delivered on cars, with a total of 48.9 per cent. of the ties delivered on the right of way, the balance on cars. Table 10-E shows the various classes of ties and the price paid for each class of tie, and the average for all classes of ties purchased, of 36.78 cents. In making up my estimate on the cost of ties I used the figures for 1908, which amounts to 43.65 cents.

Q. That is considerably higher than the 1909 price, isn't it?

A. That is higher than what was paid during 1909, although I want to say this with respect to 1909: those figures are shown there because we took them up to the last records that were available, but I hardly think that the number of ties that would be purchased during the first six months would be altogether a complete index of the cost of ties during that time. It might vary on the ties purchased. Taking 43.65 cents as a base for the average cost of all ties purchased in 1908, and loading and handling at one cent each, and the peeling at a cent and a half, and the treating of 16.9 per cent. of the ties at 2.59 cents each, for all of the ties in the system, and transportation, 250 miles, at 6/10 of a cent per ton per mile would give us 59.74 cents, and I have used in this case 60 cents as the cost of the tie. The cost of the tie in itself on the Great Northern and the Northern Pacific is very close, but the Great Northern is treating some of its ties and there-

PAGE CUT OFF

fore would be justified in using a higher price to cover the cost of the treating in proportion to the number of ties that they have actually treated.

Q. Taking that unit price of 60 cents, it gives you what amount as the total for ties on the Great Northern?

A. $14,835,331.00.

Q. Now, as to rails, frogs, switches, track fastenings and other material: how did you arrive at the items you have there?

A. The unit prices are substantially the same. I think there is largely a difference in the transportation cost, as I have made it 6/10 of a cent a ton a mile.

Q. The difference on the rails, frogs, switches, track fastenings and other material is due to you taking 6 mills per ton for freight instead of the full rate as charged in the Great Northern estimate?

A. Yes.

Q. Now, passing to ballast. What enquiry were you enabled to make and with what result?

A. I made some special enquiry as to the cost of ballasting in addition to those which appeared on that table submitted by Mr. Hogeland—Exhibit 16 corrected I believe it is.

Mr. Hogeland: Exhibit 18.

The Witness: That is right, Exhibit 18.

Q. Did you prepare a table as to cost of ballasting, sag raising and bank widening, as shown by actual work done on the Great Northern?

A. I did.

Mr. Walter: We offer that in evidence as Defendant's Exhibit 11—Morgan.

Location.	Date	Authority No.	Ballasting and Sag Raising.			Bank Widening.			Miscellaneous.			Summary.		
			Cubic Yards	Unit Price	Estimated Cost	Cubic Yards	Unit Price	Estimated Cost.	Lining and Dressing Track.	Raising Bridges	Engineering and Superintendence.	Cubic Yards.	Total Estimate	Unit Price
Spokane and Crater, Wash.														
Estimate	5-11-1903	8157	158,000	30.0c	$ 47,400.00	324,000	12.0c	$ 38,800.00	$ 7,280.00	$ 4,200.00	$ 1,800.00	482,000	$101,480.00	21.0c*
Actual Cost			159,850	31.7		347,680	26.3					507,530	152,351.81	30.0
Deer River and Cass Lake, Minn.:														
Estimate	10-20-1903	9984	66,500	31.5	20,900.00	50,200	15.0	7,580.00	2,662.50	131.00	3,109.50	116,700	34,359.00	29.5
Actual Cost			52,874			47,068						99,942	33,026.70	33.0
Hinckley and Nickerson, Minn.:														
Estimate	10-20-1903	9985	60,200	30.0	18,060.00	66,100	15.0	9,915.00	3,202.00	75.00	3,186.00	126,300	35,077.00	27.7
Actual Cost			68,783	28.0		71,100	25.7					139,883	35,706.14	26.0*
Brook Park and Coon Creek, Minn.:														
Estimate	6-15-1905	10955	59,800	30.0	17,946.00	17,730	15.0	2,695.50	2,954.25		2,355.95	77,530	27,698.00	35.6§
Actual Cost			47,720			16,611						64,331	23,336.18	36.2
Bridge 274.2 and Espanola, Wash.:														
Estimate	1-5-1906	11989	49,560	35.0	17,346.00	59,600	13.0	5,148.00	1,750.00	200.00	350.00	89,160	24,794.00	27.7
Actual Cost			44,460			27,510						72,030	37,374.85	52.0
Barmsiria and Crookston, Minn.:														
Estimate	4-8-1905	11310	160,200	35.0	56,070.00	30,750	18.0	5,535.00	6,000.00	3,351.00	3,650.00	190,950	75,936.00	39.7
Actual Cost			185,330			69,325						274,655	79,478.92	29.0
Delta and Bellville, Wash.:														
Estimate	8-23-1905	11860	128,000	30.0	37,300.00	125,000	16.0	20,000.00	3,210.00	500.00	1,500.00	253,000	62,810.00	25.0
Actual Cost			89,470			135,012						224,482	62,975.51	28.0
Tudor and Ellis, Minn.:														
Estimate	6-15-1905	11650	52,000	40.0	20,800.00	12,000	16.0	1,920.00				64,000	27,882.00	43.5
Actual Cost			58,471			12,000						70,471	33,070.71	46.9
Grand Forks and Larimore, N. D.:														
Estimate	8-14-1906	12536	50,000	20.0	10,000.00	48,000	18.0	8,658.00	7,095.00	240.00	1,295.00	98,000	27,317.00	27.9
Actual Cost			13,820			58,405						72,225	19,184.87	26.5
Billingham and Cloverdale, Wash.:														
Estimate	1-31-1905	11027	52,000	35.0	18,200.00	43,000	6.0	6,880.00	2,182.50	600.00	1,050.00	95,000	29,613.00	31.2
Actual Cost			31,150			64,275						115,425	30,860.39	25.8
Crookston and Int. Boundary, Minn.:														
Estimate	4-8-1905	11316	211,600	35.0	74,060.00	12,500	18.0	2,250.00	6,900.00	2,253.00	4,500.00	224,100	96,403.00	43.0
Actual Cost			214,539			63,300						277,839	103,694.45	39.0†
Grand Forks and Larimore, N. D.:														
Estimate	8-14-1906	12536	50,000	20.0	10,000.00	48,000	18.0	8,658.00	7,095.00	240.00	1,295.00	98,000	27,317.00	28.0
Actual Cost			13,820			58,405						72,225	19,184.87	26.5
E. Grand Forks and St. Vincent Jct., Minn.:														
Estimate	8-15-1906	12537	31,000	22.0	6,820.00	18,000	15.0	2,700.00	5,350.00	200.00	777.00	49,000	15,867.00	32.4
Actual Cost			34,056	39.9								34,056	13,498.82	39.9
Monitor and Leavenworth, Wash.:														
Estimate	2-7-1906	12015	41,800	35.0	14,630.00	43,900	16.0	7,024.00	1,640.00	150.00	600.00	85,700	24,044.00	28.0‡
Actual Cost			51,780			46,772						98,552	43,974.73	44.7
Clearwater Jct. and St. Cloud, Minn.:														
Estimate	5-28-1907	13313	179,200	45.0	80,640.00	175,420	20.0	35,084.00	5,615.95	2,376.00	6,344.65	354,620	133,234.00	37.5
Actual Cost			152,039			67,790						219,829	108,345.97	48.3
Total Estimate			1,349,860	33.3c	$449,902.00	1,054,200	15.4c	$162,647.50	$ 62,937.20	$ 14,516.00	$ 31,813.10	2,404,060	$746,821.00	31.1c
Total Actual Cost			1,218,162			1,112,311						2,343,475	$794,064.92	33.9

*Cost divided by company in its accounts.
§11,882 cubic yards stripping Hinckley Pit—15c.
†29,250 cubic yards digging out centers.
‡Track badly off center and had to be lined over after work was done. Eight months to do work. Badly delayed by trains.

Q. Now explain that table and how you arrived at it?

A. This table is prepared from the records in the auditor's office and in the chief engineer's office, showing the cost of doing ballasting, bank widening and sag raising on the Great Northern from 1903 to 1907. It shows the authority number in column 2—it shows the authority number under which the work was done. The next column shows the number of cubic yards of ballasting and sag raising and the unit price and the estimated cost. Under "bank widening" it shows the number of cubic yards, the unit price and the estimated cost. Under "miscellaneous" it shows charges for lining and dressing the track, raising bridges, for engineering and superintendents, the last three columns being the summary, which shows the total number of cubic yards, the total estimated cost, and the unit price. In each one of these locations—take for example, the first one, Spokane to Crater, Washington: the first line of figures represents the estimate made by the chief engineer as to the cost of doing these various pieces of work. The second line of figures is the actual cost of doing that work, as taken from their cost records. Under the fourth column: the estimate for the ballasting was 30 cents per cubic yard; the actual cost of the ballasting was 31.7 cents per cubic yard. Under "bank widening" the estimated cost was 12 cents per cubic yard, and the actual cost was 26 cents per cubic yard. Under the head of "lining, raising and dressing tracks" I have not carried out those items in the cost, but I have shown in the summary the total charges which do include all of those costs. And we find then that for all of the work estimated to be done on that authority, the estimated cost was 21 cents and it actually cost 30 cents. Now, that same process follows all the way through on each of the exhibits. The final result is this: that for ballasting and sag raising, covering 1,349,860 cubic yards, the estimate of the chief engineer was an average of 33.3 cents per cubic yard; that of the total amount of bank widening, the estimate of the engineer, covering 1,542,200 cubic yards, was 15.4 cents, and that the total cost of all of the work estimated to be done, covering 2,404,060 cubic yards, was $746,821, or an average for all classes of work done for ballasting, sag raising, bank widening, and including the miscellaneous charges which entered into it, of (estimated) 31.1 cents, and that for the actual number of cubic yards moved and the actual charges in their construction books for all of this work done it amounts to 33.9 cents per yard.

Q. Now, Mr. Morgan, based on your investigation of the records and upon your knowledge what unit price for ballasting did you take?

A. Well, of course, I should want to say in connection with the exhibit of the Great Northern, as in the case of the Northern Pacific that the elements of cost which enter into doing small pieces of work would necessarily be greater than if you were undertaking a large piece of work. My judgment is, that all things considered, a price of 50 cents a yard would be a fair price for the ballasting on the system.

Q. How much?

A. 50 cents a yard.

Q. Now, Mr. Morgan, I do not know whether I asked you as to the Northern Pacific. I believe their estimate shows ballast for the entire line. Is that correct?

A. It does.

Q. Can you state of your own knowledge whether their entire line is fully ballasted?

A. There are some lines in Minnesota that are not ballasted.

Q. Passing to the next item of track laying and surfacing—and that is an item which I overloked on the Northern Pacific. I wish you would go back to the Northern Pacific so that we can get that in. How did you arrive at your figure of $5,706,092 for track laying and surfacing?

A. I used as a base in track laying and surfacing $700 a mile.

Q. Why did you take that figure?

A. I thought that it would be a fair figure to use. In the first place, considering that track laying today, on any extensive piece of work, is done with modern machinery, with track laying tools and appliances, for which contract for the work can be let for $300 to $350 a mile, and all of the incidental expenses incident to track laying and surfacing which would be necessary, taking into account that your line is to be immediately ballasted, I think that $700 a mile would cover the expense of doing the work.

Q. And based upon that amount per mile you get the items shown in the second column in the Northern Pacific?

A. Yes, amounting to $5,706,092.

Q. As to the same item on the Great Northern, what do you say?

A. The same conditions govern me as in the case of the Northern Pacific.

Q. Based on $700 a mile?
A. Yes.
Q. What do you say as to contingencies?
A. I think that the base of contingencies put in by the Great Northern really amounts to about 5 per cent. on all of the items, but they have eliminated contingencies on certain of the items and put in 10 per cent. on those certain items; but if that 10 per cent. is spread over all of the items it amounts to practically about 5 per cent. of all of the items that would be included in the case of the Northern Pacific, and I think 5 per cent. is about right.
Q. What is the average rate of interest on the outstanding obligations of the Great Northern, if you know?
A. I have not looked that up; I do not know what they are.
Q. You are acquainted with the Great Northern lines in Minnesota, from personal investigation made while you were with the Minnesota Commission?
A. Yes.
Q. Have you any information generally of the line?
A. Of the entire system?
Q. Yes; or even in a general way?
A. I have not been over the Great Northern system much outside of Minnesota; and while I have of course a general knowledge of the country through which it runs, in traveling over other lines, I could not say that my knowledge of the entire system would be complete.
Q. Based upon your knowledge of the conditions in Minnesota, if the line be reproduced, with conditions existing as they are today, will you state whether or not prior to the release of the road from the construction department over to the operating department it would earn any revenue over and above operating expenses?
A. I should answer that question in precisely the same way that I answered the same question in the Northern Pacific. I believe that it would upon the theory as presented.
Mr. Teal: I requested from Mr. Donnelly, yesterday, a statement respecting the lands of the Northern Pacific Railway Company under the land grant, as to acreage and disposition. The exhibit has been furnished by Mr. Cooper, and I stated that I would take his certificate as correct, without putting him on the stand, and I now offer this statement in evidence as Defendant's Exhibit 12—Cooper.

STATEMENT REQUESTED BY MR. TEAL AND FILED AS PART OF MR. COOPER'S TESTIMONY (SEE RECORD PAGE 888).

DEFENDANT'S EXHIBIT 12 (COOPER).

STATEMENT OF LAND GRANT OPERATIONS
NORTHERN PACIFIC RAILWAY COMPANY.

	Acres.
Lands West of Missouri River acquired at foreclosure sale Sept. 1st, 1896	26,324,490.01
Lands East of Missouri River acquired at foreclosure sale Sept. 24th, 1899	2,493,807.98
Total	28,818,297.99
Net area sold Sept. 1, 1896, to June 30, 1909	18,696,734.51
Unsold area June 30th, 1909	10,121,563.48

NOTE.—Until all the land grant is surveyed and patented to the Company, probably ten years hence, the exact area cannot be determined, therefore the acreage given above as acquired and unsold is estimated only.

Net cash receipts by Northern Pacific Railway Company for Land Grant from Sept. 1, 1896, to June 30, 1909	$36,079[illegible].00

Disposition made of net cash receipts:

Applied to retire Missouri Division, Pend d'Oreille Division and General First Mortgage Bonds of Northern Pacific Railroad Company	$10,166,774.45
Paid to Trustees Northern Pacific Railway Company's Prior Lien Mortgage	25,912,572.55
Total	$36,079,347.00

I certify that the foregoing statement is correct, and request that it be considered as a part of my testimony in the Lumber Rate case.

THOMAS COOPER,

Land Commissioner, Northern Pacific Railway Company.

St. Paul, Minn.,
November 23rd, 1909.

A recess was here taken until 2 o'clock p. m.

Afternoon Session.

Mr. Holden: In connection yesterday with Mr. Teal's request for figures reported by the Commission of the State of Washington, as compared with the figures reported by the railroad to the Commission in connection with the valuation made by the authorities of the State of Washington, I have had prepared an exhibit showing a comparison of the totals of the figures, which I now tender to the other side in accordance with the promise which I made then, reserving, of course, the objection also made at that time to the competency and relevancy of the testimony.

Mr. Teal: And to the defendants, of course, the right to check it up and present figures if it varies.

Mr. Holden: If you want this as an exhibit, you should offer it.

Mr. Teal: I thought you would do it for me.

Mr. Holden: No, I have not offered it.

Mr. Teal: Subject to the right of correction and examination I have just stated, I now offer this statement prepared by the officials of the Great Northern Railway Company, showing the differences between the cost of reproduction in the State of Washington as determined by the railway company and the board of railway commissioners, as of June 30, 1906, and would suggest that in order to save having so many exhibits around, it being short, it might be copied by the stenographer into the record.

The table produced by Mr. Holden is as follows:

Great Northern Railway Company

Comparison of the estimated cost of reproduction in the State of Washington, as determined by the Railway Company and the Board of Railroad Commissioners, as of June 30, 1906.

	Railway	State
All items except Right of Way, Station and Terminal grounds,	$55,581,275.00	$41,565,867.00
Right of Way, Station and Terminal Grounds,	33,360,438.00	17,105,692.04
	$88,941,713.00	$58,671,559.04
Valuation of land not used for Railroad purposes, same not being included in State's estimate,		9,319,239.66
Totals,	$88,941,713.00	$67,990,798.70

Chief Engineer's Office,
November 24, 1909.

Mr. Walter: I want to ask one question: Of the land not used for railroad purposes, the same not being included in state's estimation, $9,319,239.66, is the valuation fixed by the state or by the railway on that property?

Mr. Hogeland: That is the state's valuation.

Mr. Walter: The state's valuation on that particular property?

Mr. Hogeland: Yes, sir.

Mr. Holden: The land covered by that figure is included with all the rest of the railroad land in the figure reported by the railroad $33,360,438, I assume.

Mr. Walter: You assume or—

Mr. Holden: I am satisfied that is the case. The railroad company claims that all the lands were railroad lands and proper to be considered as such, and the authorities of the state have taken a different view.

Mr. Donnelly: I will have a corresponding statement from the Northern Pacific that will be prepared in a day or so, which may be filed.

Mr. Teal: Will you please file it for me, Mr. Donnelly, under the same conditions, and to be considered filed by me, and then you can send me a copy to Washington.

The statement was subsequently furnished by Mr. Donnelly and is as follows:

Northern Pacific Railway Company.

Comparison of the estimated cost of Reproduction in the State of Washington, as determined by the Railway Company and the Board of Railroad Commissioners, as of June 30th, 1906.

	Railway	State
All items except Right of Way, Station and Terminal Grounds, and Equipment,	$77,143,703.00	$61,680.340.75
Equipment	No estimate made	14,724,695.94
Right of Way, Station and Terminal Grounds (Valuation of land not used for railroad purposes not included	No estimate made	32,862,872.00
		$109,267,908.69

Office of Principal Ass't Engineer,
St. Paul, Minnesota,
November 29th, 1909.

DWIGHT C. MORGAN, recalled on behalf of complainants, testified:

Cross-Examination by Mr. Holden.

Q. Mr. Morgan, in stating yesterday your previous experience as a civil engineer in connection with railroad matters, I think you stated that it was about 1887 that you did your first railroad work; or am I in error about that?

A. Yes, about 1887.

Q. That was the beginning of your experience as a railroad engineer?

A. Yes.

Q. And that work was where, with what company?

A. It was on the construction of the Cairo bridge across the Ohio river for the Illinois Central Company.

Q. And your caapcity there was what?

A. I was rod-man and inspector of cement.

Q. How long were you occupied in that work?

A. I was there about a year, I think.

Q. From that work you then went into what?

A. I went to the St. Louis Merchants bridge.

Q. And had similar duties perhaps there?

A. Yes, sir.

Q. And you were occupied in that work how long?

A. I don't recall, Mr. Holden, how long I was there. I was there until after part of the superstructure was erected.

Q. Then your next railroad experience was where? I see by referring to your testimony of yesterday that you were engaged on the Merchants bridge in 1889 and 1890.

A. Yes, sir.

Q. In 1891 you went to work with the Northern Pacific Company as rod-man between Garrettson and Helena, and later as draughtsman and instrument-man on the line over St. Regis Pass. In 1892 you became assistant engineer connected with the Southern Pacific, with headquarters at Oakland, having duties to perform in connection with the maintenance of way. I don't quite understand just what those duties were, Mr. Morgan. Did you have anything to do then with construction?

A. No; that was maintenance work.

Q. It was dealing with the line already in existence and in operation?

A. Yes.

Q. And dealing with the ordinary duties which are understood in railroad parlance to be defined by the expression "maintenance of way"?

A. That is right.

Q. How long were you with the Southern Pacific from the time you went with them in 1892 before you resigned to go with your father in the work you have referred to?

A. I think I was there about a year and a half.

Q. As I note in your testimony you say later that in 1893 you returned to Illinois?

A. Yes. Well, it was probably not as long as that; I think it was about a year. I don't recall now, I haven't kept the dates.

Q. What I had in mind was that between some time in 1892 and the date in 1893 when you returned to Illinois you were engaged with the Southern Pacific in the capacity you state, and also assisted your father in the investigation of railroads in California for the Commission of that state?

A. Yes.

Q. Both of those pieces of work being included within a time from some date in 1892 to some date in 1893?

A. Yes, sir.

Q. In 1893 you went with the Illinois Railroad Commission, and your duties then were in connection with making examinations and reports upon the character of the construc-

tion and equipment of the railroads in that state, supervision over interlocking apparatus and matters of that character, and you remained in that occupation until 1897 when you became assistant to the chief engineer of the Illinois Central. Is it a fair statement, Mr. Morgan, that until your employment in 1897, at least, your duties did not comprehend any of the work of constructing lines, new construction or even reconstruction of old lines?

A. Yes, that is probably so, except the natural attention and interest that those things would have to an engineer on which he would keep posted in respect to.

Q. I had in mind the actual experience in the work of that character and in the employments you had during those years. There was no actual experience of that kind beyond your experience which resulted from observation, more than actual experience?

A. Yes, that is right. Of course, in bridge work it was really part of railroad work, at the time I was engaged in that; the bridges were built for railroads.

Q. Your next experience was in the Yazoo Delta, in Mississippi in connection with surveys and locations for a line?

A. Yes, sir.

Q. Did that work extend beyond the mere surveys and locations, or did you remain with the Illinois Central in that vinicinity during any of the construction work that went on?

A. No, sir, I had too much respect for my life to remain in that country.

Q. Yes, sir, I should expect that might be true. You went with the Chicago-Alton in 1901, and was later on in charge of and managed the Quincy, Carrollton & Western Railroad; where is that line? I don't know, myself.

A. Why, it is a cross-line that was bought up by the Alton road. It was a small piece of property that was built by farmers through that country and was feeding the Chicago, Burlington & Quincy, and Mr. Harriman bought the property in, and I went down there and took it over and operated it until it was merged into the Alton road.

Q. That was in what state?

A. In Illinois.

Q. About what mileage did it have?

A. About sixty or seventy miles; had interchange relations with all the other lines on business.

Q. You were next transferred to Kansas City where you had charge of the reconstruction of the western division of the Alton road?

A. Yes.

Q. How long were you engaged in that work, and about when and between what periods did it exist?

A. I was engineer of maintenance of way of the western division I think about a year; perhaps a little longer than that.

Q. And at the termination of that period you then went into the employment of the Chicago Great Western?

A. Yes.

Q. At St. Paul?

A. Yes.

Q. How long were you in the employ of that company? I see you state you left its employ in 1902; do you recall how long you were with the Great Western?

A. I think about a year.

Q. And then you went with the Omaha Company in charge of the construction of the new machine shops and terminals at Sioux City?

A. Yes.

Q. You say you remained there until that work was completed, but you have not indicated about how long that was; can you tell now?

A. That work occupied about a year and a half time.

Q. Thereupon you entered into the work of presenting the figures for the Omaha road to the Wisconsin Railroad Commission, showing the value of the lines of the Omaha company in that state?

A. Yes.

Q. And it was in 1904 that you were appointed general superintendent of that company?

A. Assistant to the general superintendent.

Q. Assistant to the general superintendent?

A. Yes.

Q. And for approximately two years you occupied that position?

A. Yes.

Q. Then it was that you went into the employment of the Minnesota Commission?

A. Yes.

Q. And that work took you up until last August?

A. Yes, sir.

Q. In taking up that work, Mr. Morgan, for the Minnesota Commission you prepared and handed out to the different railroads in the State of Minnesota blank forms for

reports to be made by them to you of their physical valuation or their cost of reproduction, did you not?

A. Yes.

Q. You constructed the basis, as shown by those blanks, approximately the same, did you not, as has been shown by Mr. Darling and Mr. Hogeland's exhibits filed in this case, showing the cost of reproduction of the Northern Pacific and Great Northern lines?

A. Yes, substantially the same.

Q. The division of the items is substantially alike?

A. Yes, substantially the same.

Q. And it is your understanding, is it not, that the railroads in this state generally and the engineers in this case followed the division of items and the basis as showing the different items that you suggested and in fact required the railroad to conform to in making their reports for the use of the Minnesota Commission?

A. Yes, that is so.

Q. That is the usual and ordinary basis, is it not, that has been adopted not only in this state but in certain other states, of ascertaining the cost of reproduction of railroads?

A. Yes, I think it is substantiailly the same; in Wisconsin, at least, and in Minnesota.

Q. What other states besides Wisconsin and Minnesota, or what other authorities, have adopted that method of reporting the value of the property, to ascertain the value of the property?

A. I think, perhaps, the State of Michigan was on a similar basis, yes, in fact, it was on a very similar basis.

Q. What were the reasons in your mind as an engineer which led you to adopt that basis for determining the value of the lines in the State of Minnesota?

A. Well, of course I gave the matter considerable thought as to a base, and I don't know that it would be possible for me to assign a reason for getting it up in just that way. It appealed to me as being an intelligent division of the various items, and it conformed very closely to the division of accounts as prescribed by the Interstate Commerce Commission.

Q. Let me state it in another way: The problem which was before the Minnesota Railroad Commission was to appraise the value of the railroad properties in the state, was it not?

A. Yes.

Q. And to ascertain the value of the properties?

A. Exactly.

Q. And in order to ascertain that value you were employed as an engineer to assist the Commission, and you, I take it, adopted, with their approval and consent, the cost of reproduction as a prime factor in determining the value of the property, did you not?

A. Yes.

Q. Was it not your view, and is it not now, that the cost of reproduction thus ascertained afforded probably the most stable basis that can be reasonably devised for systematic and thorough consideration of the problem of physical value?

A. Yes, I believe in it.

Q. Well, do you not believe in it in the language which I have stated?

A. Yes.

Q. I read that language from your report to the Minnesota Commission.

A. Yes, I know you did.

Q. And I want to know if that is now your view as to this question of reproduction cost.

A. Yes, it is, Mr. Holden, but I want you to be entirely fair with me by reading the preface to my report to the Commission, in which I state there that it must be a higher authority than myself which shall decide as to the correctness of my views in respect to certain matters.

Q. Certainly. Now, that would be undoubtedly matters perhaps legal in their nature and which were not presented to you for consideration, but I am speaking now of your view as an engineer, and from the experience which you have had and the study you have given this problem. You came to work with the Minnesota Commission in a problem that they had imposed upon them by law, of appraising the value of the property, and it was your judgment and still is that in meeting that question and solving that problem the cost of reproduction afforded probably the most stable basis that can be reasonably devised for systematic and thorough consideration of the problem of physical value?

A. Yes, I believe that.

Q. You are somewhat familiar with the methods adopted by the Wisconsin Commission, of course, from your connection with the work done there?

A. Yes, sir.

Q. I think it appeared in your examination in the Rate Case in this state that the Wisconsin Commission did not

make a complete and entire examination of the lines of the Omaha Company, for instance, in Wisconsin, by going over them, but only went over a portion of the lines?

A. Yes, that is true.

Q. You expressed it, I think, that they divided the line, or the line had been divided for the purposes of that work into sections, and whether you meant it literally or not I don't know, but figuratively at least by some form of chance they selected one of the sections and determined to go out and physically inspect that section, and that was all of the inspection that was made in that state?

A. Yes.

Q. And that didn't appeal to you as a sufficient examination to enable them to make a full and comprehensive report, did it?

A. Well, I don't think that I said that, Mr. Holden.

Q. No, I don't mean to quote that, but I am asking you now whether that was not your judgment, that merely looking at a fragment of a system would not afford the body exercising the judgment sufficient data to give a reasonably intelligent answer to the question.

A. Well, I think that the more complete the knowledge is of a system that the more intelligent the answer will be. It ought to be.

Q. Well, that would, of course, be true, Mr. Morgan, but it hardly answers the question. Stating the question again as I did before, you would not have undertaken here in the state of Minnesota to have returned your judgment as to the cost of reproduction of the Great Northern lines by only traveling over it and inspecting ten or fifteen per cent. of the mileage of the state, would you?

A. Well, I didn't.

Q. No, I say you didn't do it, and would not have undertaken to have expressed your judgment as an engineer with that kind of a physical examination in front of you, would you?

A. No.

Q. And when you came here, as I think is well understood, you called for a train on each of the different lines and went out and covered substantially all of the mileage of each of the systems in the state?

A. Yes.

Q. Do you recall the number of miles of the Great Northern in Minnesota?

A. I think it is a little over two thousand.

Q. And the total number of miles in the state of Minnesota are about how many?

A. I think there is something over nine thousand miles in the state.

Q. And about how many miles did you actually inspect in your travels over the state?

A. Well, practically all of it. There were some few—

Q. Somewhere between nine and ten thousand miles?

A. There were some few branch lines that I didn't cover.

Q. But you would think it a fair statement, without being exactly accurate, to say you rode over and inspected over nine thousand miles in the state?

A. Well, I think it might be a better statement to say that I probably covered ninety-five per cent. of all of the lines that I reported in the examination.

Q. You were engaged in the work, from one end to the other, in various ways, for approximately three years, were you not?

A. Yes.

Q. The actual time out on the lines, away from the large terminals of St. Paul and Minneapolis, was from some time in May until some time in December?

A. Yes.

Q. Do you recall about how long you were on the Great Northern line?

A. Why, I think it was about twenty or twenty-five days, something like that, going over the line.

Q. You are not clear about that, Mr. Morgan. Wasn't it sixteen days?

A. Well, I don't recall exactly what it was. I might have been less than that; I don't recall what it was.

Q. I simply wanted to make the fact appear clearly. Our records show that you started out on the 18th of November and returned on the 10th of December; would that accord with your recollection?

A. Well, I don't recall the dates, but if that is what your records show, Mr. Holden, it is probably correct.

Q. It is not of very great importance. You adopted, as I understand it, in fixing your unit prices, the average of prices for the year 1905 in making your Minnesota appraisal?

A. Yes.

Q. There was some suggestion made, perhaps, in the negotiations over that subject that an average of prices for five years might have been used?

A. Yes.

Q. And that was resolved adversely to that suggestion because perhaps there had been a considerable advance in prices from say 1892 to 1906?

A. Well, yes, that was one consideration, but the main consideration was the difficulty and the time and labor involved in trying to average up prices through a period of years, going through all the records necessary. Now, taking the prices as I did there, it was assumed that they were approximately average prices. There was no definite statement made that they were exact prices. I think for all practical purposes—

Q. Well, you don't mean that the prices you took as the average of the prices of 1905 would be the average prices for a period of five years, do you?

A. I haven't a copy of my report there. I think it reads in there just what I did.

Q. Yes, I think probably you did make that statement. You say that a review of the prices for the five-year period ending June 30, 1907, enables it to be reasonably assumed that the prices generally prevailing in the year 1905 are in most respects as near the average prices for the five-year period as is practicable for the purposes of this inquiry, but you also say it must be recognized, however, that the cost of labor and materials entering into the construction of railroads have averaged higher since 1902 than any previous period and that no marked recession in prices began until the early part of this year; you mean by that, I take it, the year 1908?

A. Yes.

Q. So it is your judgment that prices after 1902 were noticeably higher than at any previous period in the history of railroad construction in this part of the country?

A. Well, that was for certain classes of railroad material.

Q. What classes?

A. Take the laboring classes on railroads, they are paid more money than they were formerly; and there has been a gradual increase in the cost of ties and timber. I don't think there has been much change in the cost of rails. In fact, a great many years ago, back in 1884 and 1885, I recall that rail was being bought for $17 a ton.

Q. Well that was an exceptionally low price?

A. Well of course it was a very low price.

Q. And it is also a fact that back in early days rails were bought right on the Great Northern road for very much more than the current prices as of recent years?

A. Yes; that is true, and at that time the rails that were

bought at so much per ton at a very much higher price laid a great deal more track.

Q. That, I think, is understood.

A. Yes.

Q. But I am simply trying to deal now with the general facts and the general conditions, that all classes of railroad labor, from the lowest form to the most expert form, and all classes of railroad material, subject to the exception that may exist in the case of rails, more markedly increased after 1902 than during the previous period. That is a fair statement, is it not?

A. I think that is generally true.

Q. And so it would generally be true, if you thought the prices of 1905 were a fair average of the five year period ending June 30, 1907, that the prices of 1906 and 1907 were relatively higher than the prices of 1902, 1903 and 1904, in order that the average of 1905 might reflect your judgment on it?

A. Well, of course, Mr. Holden, it would all depend on circumstances. You could carry that thing along from year to year, and you could carry it through into 1908 and 1909, and you would drop down very rapidly.

Q. I am glad you suggested that. There was a drop in the prices of lumber and materials made of wood which the railroads * * * use, to some extent; in some cases a very marked drop?

A. Yes.

Q. You don't contend that there was any noticeable drop, however, in those years in the prices of labor on the railroads, do you?

A. No, I think not.

Q. That is what I had in mind. And the reduction in the prices of lumber which came through the panic in the fall of 1907, are already beginning to show signs—have already shown signs of being done away with by considerable advances in those prices, have they not?

A. I haven't examined that question, Mr. Holden.

Q. You haven't explained that question. Your judgment as to the prices which you made use of in the Minnesota case, and which I take it, you have largely used in your own mind in the testimony here, so far as you have gone into that subject, was largely made up, was it not, of reports made to you by assistants that you had and whom you had make inquiries and brings you reports; is that not so?

A. Yes; of course I had the data from various sources as to prices.

Q. The data was all brought to you by the inquiries you had your assistants make?

A. Yes, and inquiries I made myself.

Q. Your work was very largely at headquarters, was it not, and it was largely in connection with directing a force that was in the field and receiving from them and regulating the reports that they brought in to you? You didn't have time or opportunity to go out into the field and make these examinations and investigations in prices yourself, did you?

A. No, only in so far as my experience and judgment would carry me in those matters.

Q. Exactly.

A. Of course, I made some personal investigations—a good many.

Q. You have not dealt, in this case, to any great extent with the question of land values, except that in your exhibit relating to the Great Northern system you have shown $21,956,436 as an approximate original cost of the entire right-of-way, station and terminal grounds of that system?

A. Yes.

Q. I don't know whether I understood the question correctly or not, but I so understood it that you were asked whether in your opinion that would be a fair figure to attribute to the cost of the Great Northern lines; did you express yourself on that subject, as having an opinion on that subject?

A. I thought that it would, yes.

Q. Well, you have no knowledge from any investigation outside of the state of Minnesota on that subject?

A. Well, yes, from the exhibit which was put in there showing the original cost of lands and what that amounted to in the reproduction estimate.

Q. And that is the only other source of information, I take it, outside of the state of Minnesota that you have?

A. Yes, practically.

Q. Now, that is your Ex. No. 8 in which you have shown in four columns the area in acres of the Great Northern terminal lands in nine of the larger cities in which it exists, the reproduction cost figures which, I take it, are the figures returned by the railway company—

A. Yes.

Q. In this case?

A. Yes.

Q. And original cost figures in the fourth column?

A. Yes.

Q. Now, to illustrate, you say opposite St. Paul, Minnesota, that there are 354.12 acres in this city of which the railway company has claimed a reproduction cost value of $8,041,686, and you have shown an original cost figure of $1,210,833.37. Now, did I understand that that cost figure covered all of the 354.12 acres?

A. Yes.

Q. And that this exhibit purports to mean that you found from the books of the Great Northern Company that the 354.12 acres in the city of St. Paul cost but $1,210,833?

A. Yes.

Q. Do you recall from what books of the company or records you ascertained and made up that figure?

A. I think that was made up with Mr. Hayden. Mr. Hayden furnished a good many of those figures.

Q. Is it not a fact that if Mr. Hayden did furnish the figures that it was very clearly stated that a great deal of the titles of the Great Northern lands in this city stand upon conveyances where the consideration is only nominal and that there is no record nor knowledge today of what the actual cost of those lands was?

A. I think that is probably so, Mr. Holden.

Q. Now, is it not a fact often—

A. I wanted to say there that all we could do was to take what the records would show.

Q. Precisely. And all I want to make clear is the unfortunate deficiency of the old records of this company, as well as, I take it, of most companies, on original cost matters. So that this figure, while it may be the figure which would come from the records of the company, does to a greater or less extent represent nominal considerations for purchases of land of which there appears to be no present record of the actual amount of money paid?

A. Yes, I think that is so.

Q. And it is impossible to tell how large a percentage of the 354.12 acres rest in that way?

A. Well, of course I can't say now what that proportion is; I don't know that it was possible.

Q. Well, it would be possible, I suppose, to go to the recorder of deeds office and take off all the deeds, but I mean from the exhibit or from your investigation it is not now possible to make the statement?

A. I haven't that in mind, no.

Q. Is it not a fact that in the original method of railroads in purchasing and acquiring their lands they are frequently

compelled to make their purchases under cover, so to speak, to prevent an unwarranted expansion of prices, in the case of private negotiations?

A. Yes, I think that railroad companies endeavor to make purchases of land under cover, but I think that it is very seldom that they are very successful in doing that; that there may be certain pieces of land that can be purchased under cover, but the great majority of it cannot be purchased in that way if it is bought in blocks. Now, I could illustrate that to you in respect to the lands that the Great Northern has been purchasing north of this property between Rice street and Mississippi. They bought individual pieces of property in there. Now, I knew that that was a matter of knowledge—it was a matter of knowledge to me, and yet Mr. Hayden and others when his attention was called to the fact that this property was being bought by the Great Northern, why, he seemed considerably surprised that anybody should know about it.

Q. Somewhat the case of the ostrich, in other words?

A. Yes, a good deal.

Q. What you really mean to say is, Mr. Morgan, and that very well illustrates it, that where a railroad company sets out to purchase a greater or less extent of lands, they possibly can remain under cover for a comparatively short period of time?

A. I think that is so.

Q. And get a few pieces, but sooner or later the activity in that vicinity is noted and the identity of the purchaser is pretty well surmised if not actually known?

A. Yes.

Q. In meeting those sorts of conditions it is a reasonably common habit, is it not, of railroads to conceal the prices actually paid by taking deeds for nominal consideration?

A. Well, I don't think it is except very recently. It may be on some lines. Mr. Cooper testified in the case of the Northern Pacific that where the consideration was not a nominal one it was the actual price paid for the property.

Q. That is at the present time, you mean, or uniformly in their cases?

A. Uniformly in their cases; that where it was not purchased for a nominal consideration the price shown was the actual consideration paid.

Q. You gathered from him that there were more or less frequent cases where in winding up the transaction the consideration was inserted as nominal?

A. Well, I presume there are some; how many, I could not say.

Q. That is indefinite. You have satisfied yourself, and I think you have made it very plain in your report in the Minnesota rate case, that railroads in acquiring lands are, on the average, compelled to pay uniformly higher prices than other persons acquiring similar lands.

A. I don't think there is any question about it.

Q. None whatever. And in endeavoring to arrive at the reasonable average basis which would be reasonably just over a large number of individual cases, you determined and acted on the basis, and I take it would now still assert the reasonableness of it, that in estimating the reproduction cost of lands of a railroad company in this part of the country, or, limiting it to the Great Northern Company, the so-called rural lands outside of the terminals, would cost the railroad companies on the average three times what similar lands would cost private persons?

A. Yes, I think about three times.

Q. And you still think and have no reason to change your view in that regard?

A. Well, that was the result of my investigations in respect to lands that were recently purchased. Now, that condition might not have prevailed, Mr. Holden, earlier during the history of the construction of railways when there was an incentive among the people to have the railroads come.

Q. Oh, undoubtedly it didn't—

A. And therefore, the conditions which might have prevailed earlier are not reflected in what we find now.

Q. Exactly. I think we all would agree with that, that the conditions a number of years ago were quite different than they are now, but dealing with the proposition as a present problem of reproduction under existing conditions you would still maintain that judgment?

A. Oh, I think that is correct.

Q. And in the large cities, such as St. Paul and Minneapolis, and large cities, generally, it would not be fair, from experience, to make use of so high a multiple, and I think it was your judgment in such cities as St. Paul and Minneapolis, that some percentage less than twice would be fair; you determine that according to the methods that you adopted, and it varied in different cities, but that there was an added percentage in the large terminals?

A. Yes, that is true.

Q. And that existed apparently for the same reason?

A. Yes, recent purchases.

Q. That added cost (speaking generally now) arises from what ordinary considerations? such things as severance damages?

A. Yes, the severance damage to property and the natural tendency of the human family to get all they can for a piece of property if it is being sold to a corporation. I don't think it is justifiable, but it is the condition, just the same—they do.

Q. In your consideration of the problem of making an estimate of the cost of reproduction, you did not take into consideration any elements of value which might exist in railroad properties arising out of fortunate location or strategic location in reference to the business it has to handle or the community which it serves, did you? You didn't deal with any such elements of value if those may properly be said to exist?

A. Well, in one way I think I did, Mr. Holden. For example, you take the lands owned by railroads in the city of Duluth which are still submerged under anywheres from an inch of water to perhaps ten or fifteen feet. Now, that property is not available for railroad uses in its present condition, but in making up the valuation on the property as a whole I made no distinction between that which rested under the water and that which rested above, assuming that its availability for railroad purposes was just as great when it was needed and will be brought into use.

Q. That, I think, would be a very fair way of treating land of that character; but if you had to do with a strip of land such as the right-of-way of the Omaha company in front of St. Paul here where there is a very narrow strip between the foot of the bluff and the river, and which is now fully occupied by railroad tracks, or the strips of land that run up through Trout Brook and Phalen Creek here in St. Paul, where there is no other land unoccupied or adjoining those strips which can be reasonably used for railroad purposes, it is not an unfair statement to say, is it, in such cases, those pieces of land have an added value because of their peculiar situation in a railroad sense and their peculiar relation to railroads and the commercial community in a city like St. Paul?

A. Yes, I think they do have, Mr. Holden, an added value. They have a strategic importance; but it is not clear to my mind that that is an element which can be properly taken into account in a reproduction estimate.

Q. That is exactly what I had in mind. In dealing with a

reproduction estimate, you did not seek to report any figures covering those added elements of value which might be argued to exist in cases of that character?

A. No, that was not considered in that way, although the result of my figures on the very properties that you have mentioned were, I think, quite as great as those turned in by the railroad companies.

Q. Perhaps that may argue the ultra-conservativeness of the railroad.

A. Perhaps it does.

Mr. Walter: It has been hitherto apparent.

Q. But you would not deny, Mr. Morgan, from your study of problems of this kind that in determining not alone the cost of reproduction of the property but the problems such as the Minnesota Commission had here of the value of the property, that there it may be very properly said to be elements of value in a property located in such a way as I have illustrated in the case of these roads here in St. Paul on the strips of land referred to?

A. Why, Mr. Holden, if we were to consider the value of the property as a utility, why, it would be very difficult for anyone to criticise perhaps any figures that might be put in on that.

Q. Is that reflected by the statement you made in your report to the Minnesota Commission, which I would like to read to you, I think it is probably what you had in mind: "The cost of reproduction and value as a utility have no necessary or logical relation, and the fact that the terminal lands or the properties, in part or in whole, are not actually to be reproduced, or the fact that it might not be possible at all to reproduce them or their equivalents, probably renders their present possession invaluable, not only to the owners, but to the communities dependent upon the facilities afforded for industrial activity and commercial supremacy?" Now that presents your thought in a concrete way?

A. Yes, sir, it does.

Q. Now, taking a railroad like the Great Northern, for instance, an entire system, as your general knowledge leads you to understand that it exists, if it be said to be a road in practical, efficient operation, and well located in the large cities through which it runs, and serving the public with reasonable satisfaction and enjoying a reasonable and steady flow of business, would you not say that there was in such a system elements of value which were fair to be considered in deter-

mining the value of the property over and above the bare cost of reproducing the physical elements? To make myself plain, I am not dealing now with the legal question (that may be argued by others) as to whether that element of value, if it exists, is proper to be considered, but I am asking you from your study of this problem and as an engineer, whether from that point of view and under that kind of circumstances there are not elements of value in such a system.

A. Why, yes, I certainly do believe that there are elements of value. Whether or not they can ever be reduced to tangible dollar-and-cents shape I can't say.

Q. Then let me ask this question, and that is as far as I care to go on that subject: would it not be your judgment that a railroad system, such as I have described, in full operation, and with a history of a considerable number of years of efficient service to the public is of greater value than a new system presently constructed along the lines of a table showing the mere cost of reproduction.

Mr. Teal: But, Mr. Holden, may I ask you a question there: Is this system you propose a profitable system? Suppose it is losing money?

Mr. Holden: I haven't said anything about its profitableness.

Mr. Teal: I didn't know whether you put it that it was losing money or making money.

Mr. Holden: No, I assume that it is efficiently serving the public and enjoying a reasonable volume and a steady volume of tonnage.

Mr. Walter: Fairly remunerative?

Mr. Holden: Yes, I am not assuming that it is a losing proposition.

Q. Assuming favorable conditions surrounding such a system, would you say that a system of that kind has more value to it than a brand new system put into the same merely physical condition?

A. Well, of course it is quite impossible for me to conceive of relations which would exist between an old line and a new line. We are treating upon a subject here which never has to be done.

Q. You mean the reproduction?

A. The reproduction,—never has to be done.

Q. We hope that is true. But my question deals with a perfectly fair supposition, I think, and I think it is a reasonable question and I would like to have an answer to it.

A. Well, it would not be an answer with parallel cases, Mr.

Holden. Of course, I realize with a railroad that has long been in existence, that has gone through a period of development, of course it has established relations, conditions, and everything else which are valuable to it and make it more valuable than a new road would be without the benefit of many years of effort to produce what you find in the old system.

Q. That I think is the idea I had in mind. Now, Mr. Morgan, I want to direct your attention to the figures you read into the record, I think without an exhibit, relating to the quantities and prices you ascertained from the Great Northern books, of contract work on grading, the prices paid contractors. You found there were 116,951,222 cubic yards of various kinds of material?

A. Yes.

Q. That, I understand, is substantially the equivalent of what is shown in one of the exhibits here as 56 per cent. of the total quantities claimed?

A. I think it is just about that.

Q. Over approximately how many years do you recall or do you know that that contract work was spread?

A. Well, I think we took every record that could be found, Mr. Holden. It covered a great many years.

Q. It is your general information, is it not, that the beginning of the present Great Northern system was somewhere in 1862?

A. Somewheres along there, yes.

Q. And from that time down to the present time, the existing system has been a gradual growth, a gradual extension?

A. Yes.

Q. And so the 116,000,000 and odd cubic yards referred to, to a very large extent, cover in a rough sense at least, all of that intervening period, does it not?

A. Yes, it covers all of the grading quantities we could find.

Q. And a considerable portion of it was done many years ago?

A. Yes.

Q. And it is distributed along, as shown by the records, over the period of first construction in 1862, or thereabouts, down to a recent date?

A. Yes.

Q. Well, I take it, from what you have already said and from your general knowledge, that the contracting prices, prices of labor and all costs of that kind, were considerably lower—much lower—ten, twenty and thirty years ago (of

course varying in various ways) than they have been in the last two or three or four years, have they not?

A. Well, yes, the prices were lower, I think, in earlier years, but, as an offset to that, you must bear in mind that the tools and machinery which were available for conducting work at that time were not the tools and machinery which we find today for doing the work; there are elements of economy that it is possible to introduce today, in the way of steam shovels.

Q. With all of the benefits that may exist by that, is it your assertion that it today costs less per yard to move earth, for instance, than it did in 1870 or 1875?

A. I made no assertion at all.

Q. No, I know you made none; I am asking the question?

A. No.

Q. While they have the machinery today, the wages of the men who run the machines are very much higher than corresponding wages were twenty or thirty years ago, but I don't want to get into a detailed discussion, Mr. Morgan, I simply want to get your opinion or get a statement of the fact that the contract prices that may appear on the books of the company, per yard, of the grading done of any kind in 1865 or 1870 or 1875 or 1880, or any such remote period, would not be, would it, a fair index of what the price should be in a cost of reproduction as of the present time?

A. I simply went into the records, Mr. Holden, and got the information out of that. I have expressed no opinion in respect to what the relative cost would be then and now.

Q. No, I think that is probably a fair statement, but I am bound to assume that the showing of an average price of 27.9 cents per yard has some purpose. Now, if I understand you that you do not claim that that has any relation necessarily to the present prices, why, I think we can pass on to some other subject. I would not assume that you would claim that those average prices of cost over that many years would have any reasonable relation to the fair prices today.

A. I merely presented the facts out of the records of the company, and have made no use of them other than to present them.

Q. Then I would ask you to give your judgment as an engineer, Mr. Morgan, I ask you to give me an answer to that question, whether you think the prices over as long a period as that, and all bunched together, and averaged, without any knowledge, I take it, in your mind of the relative volume

of the work done in relative years or relative periods, would be any fair index of what would be fair prices for grading as of the present time?

A. I wouldn't want to acept it as a base, myself.

Q. And if you were going to undertake a bit of railroad construction, you wouldn't bother your head about what any such average figures were, would you?

A. No, I don't think I would.

Q. Now, you made some deductions that seemed to indicate that from those figures .93 of a cent per yard seem to be the charges for overhaul?

A. That is what the record shows on that.

Q. The record shows, that is, for the overhaul applicable to all of that, 116,000,000 of yards, over all of those years?

A. Yes.

Q. Now, is it not a fact, say prior to the last ten or fifteen years, that in the construction of railroads there were very many more trestles and bridges, temporary wooden bridges put in, than modern construction would dictate, less filling in of embankments and things of that kind?

A. Oh, I think that is so. In the modern methods of construction the roads are more permanently built than they were many years ago.

Q. It would not be an unfair statement, considering the early history of this railway, and the construction of it in the way that has been referred to, that there were a great many temporary wooden bridges and wooden trestles put in during the periods of construction upon different portions of the line, prior to say ten years ago? That was a common method, was it not?

A. Yes, I think that is so.

Q. Would that not necessarily bring about this fact, that there was a much less overhaul in that method of construction than there would be today, where the dirt from a cut is hauled out longer distances to fill in such places, where as in former methods it would be covered over by a trestle?

A. Well of course that would depend upon the nature of the country. There is a great deal of country where bridges are put in where there is no overhaul at all.

Q. Of course, it is very plain that that figure of .93 of a cent is offered here as a contrast to Mr. Hogeland's deduction from his Exhibit 16 where it appears that 2.2 cents is the average cost over the last ten years?

A. Yes.

Q. For overhaul per yard. Now, I want simply to bring

out what I think is a fact, that during such a period as the last ten years there has been a great deal more attention paid to making solid banks, and there have been very many less open places left in the roadbed, there have been a less number of those temporary trestles and culverts and bridges of that kind put into the roadbeds than formerly?

A. I think that is true.

Q. And would that not necessarily bring about the fact that during the last ten years, overhaul would cost more than during the period prior to that time?

A. I have not disputed Mr. Hogeland's figure of 2.2 cents on the last ten years.

Q. Well, that is all right. I want to make clear just exactly what this—

A. I simply brought out in the record what it was on the yardage that showed in the construction work.

Q. I simply wanted to make clear the difference in the character of the construction of railroads in the early days and at the present time. Your Exhibit 11, Mr. Morgan, entitled "Estimated and Actual Cost of Ballasting, Sag-Raising and Bank-Widening," you have taken off from the books of the company figures and quantities for a period from 1903 to 1907. Do I understand that this exhibit and the average figures worked out from it are offered as presenting any basis of reasonable present prices for ballasting, for instance?

A. Presented to show what the cost of ballasting has been according to the charges on the books of the company. Now, I do not say that that would represent a proper charge per yard for ballasting—what that shows, because there are certain items not included in the cost there that I think properly should be included in the cost of ballasting.

Q. Will you enumerate some of those, please?

A. Well, for example, the depreciation of equipment would be one item, and transportation of men and material would be another.

Q. Stripping of ballast pits?

A. The stripping of ballasting pits is included in there, to a certain extent; there are one or two to show the cost of that, and are included so far as it is shown.

Q. Well, pretty generally it is not a portion of these figures, is that not true?

A. How is that?

Q. I say pretty generally on these figures that is not included in these items?

A. That is so, but on the contrary there are shown in that

table certain elements of cost that should be eliminated, because in the reproduction estimate there are included elsewhere; for example, you take that column which shows cost of raising bridges. Now then, if you are going to ballast a line on the theory of reproduction, all of that cost would come out, because you would construct your bridges in such a way that they would be in a position to receive the ballast without additional expense of raising them.

Q. That is but a negligible item, is it not? It is only fourteen thousand and odd dollars out of a grand total of nearly $800,000?

A. Well, there is the item also of engineering which is taken care of elsewhere.

Q. Yes, that is $31,000 total.

A. Yes.

Q. Now, Mr. Morgan, your figures are—and I don't say that reflecting at all upon your method, prboably they were taken right off of our books—but they do include both ballasting and sag-raising?

A. Yes, they do.

Q. In one item?

A. Yes.

Q. And where it appears in the first item which you referred to, Spokane to Crater, Washington, there was a single authority, apparently issued by an executive officer, and it appears there was estimated 158,000 ucbic yards, and the unit price was estimated, and the price was worked out, that included in an intermingled way both elements?

A. Yes.

Q. Ballasting, in a reproduction cost estimate, is one thing, and sag-raising, of course, would not be in such an estimate, but it is a very different thing than ballasting, is it not?

A. I can't say that it is, Mr. Holden, in a general way. It contemplates the use of ballast very largely.

Q. It may contemplate the use of gravel, but you would not say that the same cost per yard would attach to sag-raising or even anything reasonably close to it that would attach to ballasting, would you?

(Witness handed exhibit by Mr. Walter.)

A. It would be a cheaper class of work; there isn't any question about that.

Q. Ballasting is worked out by the use of a much larger material than gravel, is it not, ordinarily? Well, perhaps I am wrong about that in such a general statement, but in

ballasting a track there is a larger element of labor involved than there is in raising sags?

A. Certainly there is, although there is always a considerable element of labor involved in sag-raising, because you have got to raise your track.

Q. Do you raise it in any such way as you do in the raising of a track which results in ballasting?

A. In exactly the same way. The only difference is that you finally fill in your track and finish it.

Q. Don't they make a much bigger lift in sag-raising than they do in ballasting?

A. It all depends upon how much ballast you put in under your track.

Q. I am speaking about normal conditions, the average lift of ballast and the average set of conditions?

A. Of course, you take sag-raising, and there is a certain amount of it that can be bulldozed off with a bulldozing machine, but that which is underneath the track you have got to raise, but you raise it as high as you can. You can't make a lift of more than eight inches usually at one time, and you often do that in ballasting.

Q. When you ballast a track in a normal average way, you have got to tamp very thoroughly, and that takes a good many men and a good deal of time?

A. Yes.

Q. And when you are merely sag-raising, you don't pay anything like that amount of attention to tamping, and you don't need any such amount of men at the work?

A. Yes.

Q. To keep in more or less general lines, the combined cost of ballasting and sag-raising, would not deal with the same subject at all as ballasting in a reproduction estimate?

A. I think if you will look through the records of the chief engineer's estimate on that, that he defines himself what the difference in cost is. Here is president's authority No. 9984 in which the chief engineer's estimate of the sag-raising is 34 cents a cubic yard, and the estimate for ballasting is 32 cents a cubic yard.

Q. That was up here in Minnesota, Deer River and Cass Lake?

A. Yes.

Q. And you show a combined figure of 31½ cents?

A. Yes.

Q. The exhibit shows 31.5 cents. Have you got the estimated number of yards of each class of work there?

A. Yes, it is 15,500 cubic yards of sag-raising and 47,500 cubic yards of ballast.

Q. Now, then, if I understand the method in which this exhibit was prepared, you have added those two quantities together and shown as appears here 66,500 cubic yards, and you have averaged the price, and the price you show on the exhibit, 31.5 is not the price shown on the records of the Great Northern Company, but is an average computed by whoever made up this exhibit?

A. Well, that of course w. the average for both the sag and grade-raising and the ballasting.

Mr. Walter: It so appears on the table.

The Witness: It so appears on the top of it. It is both ballast and sag-raising.

Q. It is both ballast and sag-raising, but it does not appear that there was a separate price on the records of the company for ballasting and a separate price for sag-raising, and of course as the relative quantities of ballasting and the relative quantities of sag-raising would vary, as they do here, to take an average price for both would reflect a very unstable set of conditions as to either?

A. Yes.

Q. In other words, it seems to appear from this exhibit that 31½ cents was the price on the company's books for ballasting and sag-raising; the fact would appear to be that there was a separate price for each?

A. It was a separate price, Mr. Holden.

Q. Yes, I say the fact appears, but it does not appear on the exhibit; and the price as shown on the exhibit is not on the company's books. Of course, I don't know how much difference that would make; it would depend, as I can see, if there was a very small amount of sag-raising and a very large amount of ballasting mingled together in that way, or vice versa, an average price might be a very infirm statement of what the actual fact was, but I will not dwell on that any further. Now, another point I wanted to ask you about: These pieces of work, ballasting and sag-raising, bank-widening, were all done, were they not, on a completed road at actual operation?

A. Yes.

Q. Under those conditions we have a road that has been in operation a greater or less length of time, but what may be

called a matured railroad, and this is a piece of work done with a completed road operating efficiently; that is true?

A. Supposed to be, yes.

Q. Now, that is a very different state of facts, is it not, and would reflect itself in the cost in a different way, would it not, between ballasting a new road during the construction period?

A. It shows on the face of it that it is.

Q. Exactly, it shows on the face of it, but I wanted to make it clear. Would it not be a fact that the ballasting and sag-raising under those conditions on the completed road, in efficient operation, would be much less expensive than ballasting a new road and during the construction period?

A. Yes, that is true.

Mr. Walter: Would be less expensive?

The Witness: Would be less expensive, yes.

Mr. Walter: On the completed road?

The Witness: On the completed road; it shows on the face of that statement there that it is.

Q. There is no question about that, but I want our friends, like Mr. Walter here, to be perfectly clear in his understanding just what the facts are.

Mr. Walter: I was under the impression that to do ballasting while you were operating trains would cost more per cubic yard.

The Witness: It all depends upon circumstances. There are pieces of road where it would cost very much more.

Q. One other point in that connection: You have already stated that you had no criticisms to make upon the accuracy of exhibits 16, 18 and 19 as corrected?

A. Well, according to the books of the company.

Q. Yes, the accuracy of them?

A. Yes, according to the reords of the company.

Q. Now, in reference to Exhibit 18 corrected, which deals with the actual cost of ballasting, the transportation charges which have been the subject of some of your testimony, are a very inconsiderable item in the case of ballasting, are they not, and that is ordinarily true?

A. Well, I don't recall.

Q. The exhibit shows that of a total of $1,375,232 for all of the different pieces of work, only $125,265 was involved in the transportation charges, and that of the average price of 66.7 cents per yard shown at the end of the exhibit in the last column, the transportation charges have only figured in at 6.1 cents per yard. What I had more in mind was that ordi-

narily in the cost of ballasting, the transportation cost is one of the lesser items and is less proportionately to the whole than it is in some of the other classes of work.

A. Well, of course, the transportation charges, Mr. Holden, have been apportioned to ballasting from the complete records of the company, a certain proportion has been assigned. Now, of course, the transportation charges on some of these lines are very heavy, as we have shown in that statement there.

Q. Dealing with the line Columbia Falls to Rexford, the transportation charge there seems to be 15 cents per yard. Now, just where is that, do you know?

A. Columbia Falls to Rexford?

Q. Yes?

A. It is out in the western part of the country.

Q. As a matter of fact, it is away up in the upper stories of the Rocky mountains, is it not?

A. It is up in the mountainous region.

Q. It is up in the highlands up there and where there isn't much of anything or anybody?

A. Yes, that is probably so.

Q. Now, in the construction of a piece of road out there, as was done by the Great Northern (in 1902 this construction was, I think we will probably ascertain the date) the item of transportation would be a very large expense, would it not, both because of the long distance which men would have to be brought and also the long distances that material and supplies would have to be brought?

A. Yes.

Q. Much larger in proportion per yard or any other unit than it would be in places like North Dakota and the State of Washington, near the central sources of supply?

A. Yes, I think that is true.

Q. That is a very sparsely settled country up there, isn't it, and there is practically no population even today, and naturally speaking, the cost of transportation, and, in fact, published rates are very much higher in a territory of that kind than they are where there is a heavy volume of tonnage and lots of people and easy grades; that is true?

A. Oh, yes.

Q. Do you know whether that line, the Columbia to Rexford, was built by the Great Northern at all or not, or whether it was built by a separate corporation?

A. The probability is it was built by the separate corporation. A great many of them have been built by a separate corporation.

Q. A great many of the lines of the Great Northern Company were built by absolutely outside and independent companies, and others were built by companies organized separately, perhaps, in the interest of the Great Northern, but still separate, independent corporations?

A. Yes.

Q. You ascertained that fact in your investigations in this case?

A. Yes.

Q. Now then, of course, laying aside the question of whether the charge of tariff rates is charging more than might be desirable, you would not assert for a moment that if the Great Northern Company were hauling material for a separate corporation, whether it be a subsidiary corporation or whether it be the Milwaukee & St. Paul road, that it could lawfully charge any less than tariff rates, would you?

A. No.

Q. So, if this Columbia Falls to Rexford line was built by a separate company, the application of tariff rates, whatever they were, was of course the only lawful method the company could show any charges on its books.

Mr. Walter: That is purely a question of law.

A. I think that is so. I don't question that at all.

Mr. Holden: That construction was wholly by a diffeernt company, and we would be the last ones, in the presence of our friends from the Interstate Commerce Commission, to suggest that we would be charging less than tariff rates to anybody.

Q. Now, the line Curlew to Midway, do you know where that is, Mr. Morgan?

A. That is in the State of Washington.

Q. And the Great Northern passes another very high mountain region, and under very difficult engineering conditions?

A. Yes.

Q. Through the Cascade mountains?

A. Yes.

Q. Did you ascertain whether that piece of line was not built by a separate company?

A. I think probably it was. Nearly all of the branch lines of the Northern Pacific—a great many of them—have been built in that way.

Mr. Teal: You have said the Northern Pacific; you mean the Great Northern?

Q. You meant the Great Northern?

A. The Great Northern, yes.

Q. While the charging of tariff rates may be from an economic point of view a subject of discussion, in view of the regulations and law on the subject you have no criticism of the Great Northern Company for making such a charge on the books?

A. Of course, I could not advocate the Great Northern's doing an unlawful act, but as related to reproduction where the property is all brought together under one, it might be different.

Q. That brings up the point we have had all along, and I think it was reflected in your statement a moment ago, that the cost of ballasting a completed road which has been in operation for some time is less expensive than the cost of ballasting of a new road in the period of construction?

A. Not altogether. I qualified that statement afterwards.

Q. I didn't hear the qualification, but if you desire to state specifically the qualification, you may, but I am simply dealing with general lines?

A. Of course, I feel this way, that where ballasting is done under the stress of very heavy traffic, as much of it is done, the cost of the ballasting increases very greatly.

Q. Yes, that is true; we will agree with that; but if it be not done under the stress of heavy traffic, but under average and normal conditions where the line is easily within its capacity, then, in those cases, the ordinary cost would be less than the cost per yard during construction period?

A. That is all shown on that statement.

Q. What I wanted to ask you was: dealing with the subject from a general point of view, whether the moving of men and materials, supplies and outfits, over a line under construction, would not ordinarily be more expensive and costly to the railroad than moving the same kind of traffic over a completed line which has been in operation for a considerable period of time?

A. Oh, that would probably be true, Mr. Holden; I think that is right.

Q. So that a rate, a tariff rate, adjusted on a reasonable basis to a going road, that has arrived at an efficient operating condition, and assume to only return a reasonable profit for the service rendered, might not cover the entire cost of moving the traffic on a road under construction, might it not?

A. Well, that might be true in some cases. Of course, the proposition of charges of 6/10 of a cent per ton a mile is an arbitrary construction rate, and it does not mean that all material moving under those rates cost equally 6/10 of a cent per

ton per mile, because some of it would cost less and some of it would cost more, and the great bulk of the tonnage would probably cost less than that; for example, the transportation of the rails and the ties, the switch ties and items of that kind, which move under a very low classification; that constitutes the bulk of the tonnage. So that getting a construction charge of 6/10 of a cent per ton per mile is not done upon the theory that it would all be equal in cost. Some would be more and some would be less.

Q. Yes, it necessarily must represent an average?

A. Yes.

Q. And it is approximately the average judgment as to what would be required on the average to cover the cost of conducting the transportation; is that not a fair statement?

A. Yes, that is all right.

Q. Now, one other question: In your conception of figuring out a cost of reproduction, is it your idea that after the track-laying the ballasting would immediately follow without any surfacing of track?

A. No, there would be a certain amount of surfacing of track to put it in suitable shape to move your construction train over the line. They always do that.

Q. Of course, you could not really move anything over the line except under very bad conditions, unless the track were held in place by enough surfacing to accomplish the result of keeping it in line?

A. Yes.

Q. I understood you to state in your direct examination something to the effect that in this problem of reproducing a line which is now ballasted that the ballasting would immediately follow the track-laying and that there was no room for an item of charge for surfacing?

A. Oh, no.

Q. I misunderstood you, perhaps?

A. You misunderstood me, Mr. Holden, because my estimate on the cost of track-laying would cover construction and surfacing.

Q. Do you know what has been the actual practice and the actual fact in the matter of surfacing track, for instance, of the Milwaukee & St. Paul road that was recently built to the coast, or the Great Northern road when it built its Pacific Coast extension, whether it was fully surfaced, and also whether it was ballasted as soon as the ballasting could be done?

A. I do not.

Q. You are not advised even as to the Milwaukee road?

A. No, I am not.

Mr. Walter: In a reproduced road, do you use it a while before you ballast it?

Mr. Holden: Well, you can't use it at all unless you surface the track; you can't move over it.

Mr. Walter: How do you build the new road?

Mr. Holden: I wouldn't know how.

Q. Mr. Morgan, one other question: You read into the record a computation in reference to the average cost per ton mile on the Columbia Falls to Rexford line, of 3.4 cents; that computation, or at least, the computation of the ton mile was made by some of your assistants in this recent investigation?

A. Yes, sir.

Q. And you have the figures, I take it, which could be accessible to us, to be re-examined?

A. Yes.

Q. I want to say that it seems to us utterly impossible that that could be true, but of course I do not assert that it is not, and we would like to have you turn over to us the computations; otherwise we would have to go through all the waybills.

A. I would be very glad to do that.

Q. We would like the privilege of checking that, and if at the time we next meet in this case we have been able to accomplish that I would like perhaps to file an exhibit or statement of some kind; it will not involve any extended testimony.

By Mr. Donnelly:

Q. Mr. Morgan, taking the first item on your list, the Morgan Exhibit No. 3, that of engineering, 3 per cent.: I understand you allow that to be fair?

A. I think it is a fair percentage.

Q. The next item, right-of-way, station grounds and terminals: You have not assumed to fix what it would cost at the present time to acquire any of those properties?

A. No, that is an estimate of the original cost—the proximate original cost of the lands, which was prepared at request of counsel.

Q. And the exhibit filed in connection with that, purporting to show what the original cost of certain properties actually was, is open to the same criticism that

implied in Mr. Holden's question regarding a corresponding exhibit of the Great Northern?

A. Yes, sir.

Q. That is to say, that the totals as there shown, include in many instances simply the nominal considerations as shown in deeds for pieces of property where the actual consideration does not appear?

A. Yes, that is correct.

Q. That is true as well of the Great Northern?

A. Yes.

Q. In that exhibit you have spoken of a large quantity of the right-of-way of the Northern Pacific being donated, and you also speak of a large quantity of terminal properties of the Northern Pacific having been donated; and you do not apparently consider that anything was paid by the Northern Pacific for any of those properties, you treat them as having been a gift to the company?

A. Yes, that is right.

Q. Are you at all familiar with the original act incorporating the Northern Pacific Railway Company and giving to it its grant of right-of-way, and of lands on either side of the track?

A. No, I am not.

Q. Well, you understand, do you not, Mr. Morgan, that it has been a condition of these grants to all of the companies that there should be an actual construction of railroad by the individual incorporators to whom the grant was made?

A. Yes, I understand that is true.

Q. And that in point of fact, as regards the Northern Pacific Railroad Company itself, the original incorporators of that property were practically pauperized in the attempt to carry the project through, notwithstanding this munificent grant; do you understand that?

A. They might have been better off if they had not tried it.

Q. And do you know that it is a fact, in addition to that, in addition to the fact that the property has gone through two receiverships, that the government is at the present time actually receiving an additional consideration for the grant in the way of reduced freight rates for the property that is carried over it? That is true of all of these land-grant roads, is it not?

A. I think it is; that is my recollection.

Mr. Holden: It is a continuing—

Mr. Donnelly: A continuing obligation.

Mr. Walter: Why can't you produce that?

Mr. Donnelly: There is no occasion of producing it because it is a part of the law of the land.

Mr. Walter: Then why testify to it?

Mr. Donnelly: I simply want to call attention to it. You are treating it as being an actual gift.

The Master: This is proper cross-examination.

Mr. Donnelly: Certainly.

Mr. Walter: All the testimony showed that this land was donated by the government in consideration that they would build this line of railway. Now, if there is anything about the government getting reduced freight rates, that can be shown without in any wise putting in in in this form. That is the only objection I am making.

Mr. Donnelly: It is a part of the law.

Mr. Walter: Then what is the use of examining about it?

Mr. Donnelly: Because I want to accentuate it and bring it out in relief, in view of your statement that it is a gift. It is nothing of the kind.

The Witness: That statement was prepared by Mr. Cooper, the land commissioner.

Mr. Donnelly: That is, a statement of the cash actually paid?

The Witness: No, the statement you have in front of you there.

Mr. Walter: The land donated?

Mr. Donnelly: Yes.

Mr. Dillard: It is a donation in a sense.

Mr. Donnelly: Now, whether it was a good contract or a bad one for the government, it was a quid pro quo given by them.

Mr. Walter: We will argue that later.

Q. Taking the item of clearing, Mr. Morgan, you have expressed your judgment that $50 an acre would be a reasonable amount to allow for that?

A. Yes, I think it would.

Q. Upon what is that judgment based?

A. Well, it is based upon a knowledge of the clearing in Minnesota, for one thing, and it is based upon the researches which I made covering the Great Northern which runs through a similar territory.

Q. Of course the clearing in Minnesota would not be anywhere near so expensive as it would be in Washington, would it?

A. Not at the present time it would not, although in the

early days the clearing in Minnesota was very heavy on certain parts of the Northern Pacific line.

Q. Are you acquainted with the conditions there in western Washington, on the western slope of the Cascade mountains and down through the Gray's Harbor country?

A. Not particularly, no. I know the timber is very heavy and very long.

Q. And the figures that you got from an examination of a large acreage of the Great Northern shows, I think, an average of about $44 contract price paid by that company for its clearing over the entire system?

A. About $43.

Q. That, of course, would not represent the entire actual cost to which the company would be subjected in connection with the clearing?

A. Possibly not.

Q. There would be some additions to be made for that, and you have actually allowed for them in your fifty-dollar figure?

A. Well, I thought fifty dollars would cover it.

Q. Of course, the actual contract prices paid by the Great Northern for its clearing, say in western Washington, along in the '90s, when it started its road, would not be a fair test of what either company would be obliged to pay at the present time, would it, for clearing in that state, for example?

A. Possibly not entirely in itself.

Q. Have you any notion, Mr. Morgan, as to the proportion of the Great Northern road that runs through the prairies, as compared with the amount of the Northern Pacific that runs through a very different character of country?

A. No, I have not changed the acreage in either case.

Q. No, but you have assumed that prices paid for the clearing on the Great Northern were fairly representative of what it would cost to do corresponding work on the Northern Pacific?

A. Yes.

Q. That, of course, would not be true if in point of fact the Great Northern ran across much more prairie country than did the Northern Pacific, would it,—the averages that you get?

A Well, if you get average per mile, it would not, no; the averages per acre, according to the number of acres, there might be a relation and I believe there would be.

Q. If, for example, the Great Northern ran across the Northern part of Montana where the country was practically

untimbered, and the Northern Pacific running through the southern part of Montana, we will say for the purposes of illustration, ran across country that was comparatively heavy timber, and both of them had the same acreage for right-of-way purposes, you would not say that the amount which the Great Nortern was shown to have paid for clearing across the State of Montana should be taken as a fair index of what it would cost the Northern Pacific for clearing across the state?

A. Oh, there would be differences, of course.

Q. Do you know as an actual fact whether the country penetrated by the Northern Pacific is more or less heavily timbered than the Great Northern?

A. I cannot say.

Q. The actual prices paid in recent years for clearing are very considerably in excess of $50 an acre; that is, in that western country?

A. Oh, yes, I think some of it is very much higher than that.

Q. Now, taking the item of ties, you assume, as your base prices for the Northern Pacific, the figure of 44 per cent., which is shown to have been the average price paid during the year 1908?

A. Yes.

Mr. Holden: 44 cents?

Mr. Donnelly: 44 cents.

Q. And to that you add two cents for loading and handling and a cent and a half for peeling?

A. Yes.

Q. Making your base price about 47-1/2 cents as against a price of the Northern Pacific of 55 cents; is that correct?

A. I think that is about right, yes.

Q. Then the main difference between your prices and those of the Northern Pacific for ties lies in the matter of transportation, does it not?

A. Yes.

Q. You have assumed six mills per ton-mile?

A. Yes.

Q. Whereas the Northern Pacific has assumed tariff rates. And in assuming six mills per ton mile you have assumed, applying the formula suggested by the Interstate Commerce Commission for the determination of the cost of moving freight, that is, by assuming that the passenger cost bore a particular relation to the freight cost—you have assumed, I

say, that six mills per ton-mile would fairly cover the cost to the company of moving the ties?

A. Well, I have not, as I stated this morning, assumed any refinements in respect to the percentage of operating expenses as between passenger and freight. I have taken the average of the two, assuming that they bear relatively the same. I am not undertaking to go into the refinments of it.

Q. No, but getting at it in that way, you figure that would cover the cost of moving it?

A. I figure that the cost of moving would be less than that, but that represents a fair average allowance to make.

Q. Well, didn't you say this morning that it was in applying that formula that was suggested by the Interstate Commerce Commission for determining the cost of moving traffic that you arrived at that figure as representing what it would cost to move it?

A. No, I said this, Mr. Donnelly: that the average revenue per ton per mile on the Northern Pacific is approximately 8-1/2 mills, and assuming that the relation of cost between passenger and freight was the same, that 55 per cent. representing the operating cost would produce a cost of 4.6 mills, but that I had allowed as an average .6 of a cent per ton-mile because some of the transportation charges would perhaps be higher and perhaps some would be lower, but I took that as an average.

Q. That would be as an average?

A. Yes; not as an average cost, but as an average allowance.

Q. Oh. Then of course in taking as the basis of your figures the present revenue per ton-mile of the Northern Pacific, you assume that you have an actually constructed and operated road; the Northern Pacific present revenue per ton-mile, for example, of 8-1/2 mills is the revenue that is received on a railroad that has been in operation for a long period of time?

A. Yes.

Q. It would hardly be fair, would it, to assume that the cost would be anywhere near as light on a railroad actually under construction and not turned over to the operating department?

A. The elements of cost which would necessarily enter into the handling of heavy commodities of this kind would be less than would be the average cost of taking care of the business.

Q. That is true.

A. Because you avoid all the terminal charges and you handle it in carload lots, and in that way I have tried to justify the 6/10 as an allowance.

Q. But to come right down to the general question that I have asked you, Mr. Morgan, it is true, is it not, that the cost of moving freight of any kind over a railroad under construction and not turned over to the operating department is much greater than it is in hauling it over a road perfectly equipped and in operation?

A. Well, I wouldn't want to say that it would be much greater.

Q. Well, it certainly is greater?

A. I believe that it is greater.

Q. And you have assumed this six mills, which is considered less than the tariff rate, notwithstanding the railroad might in actual experience desire to make use of another railroad for the purpose of transporting its materials, ties and rails, to the places where they were to be laid?

A. Well, I think the six mills is intended—at least I intended it generally to cover transportation over foreign lines to a certain extent, as well as transportation over its own.

Q. You would not undertake to say that six mills per ton per mile would cover the tariff charges over another line, would you?

A. It might not on some of the commodities, and on some it might more than cover it. For example, take the rate on rails from Chicago to St. Paul, the tariff rate on that is only about four and a fraction mills per ton per mile.

Q. The existing tariff rate?

A. The last that I examined it, yes.

Q. You mean a special tariff rate that was made for the purpose of moving that traffic?

A. I think it is the regular rate that is in.

Q. Well, it was a rate made for the purpose of moving the Milwaukee material, was it not?

A. No, it wasn't for moving the Milwaukee material. It is a rate that I think is used by all of the lines. In fact, they all came together on the same basis.

Q. Unquestionably all of the rates would be available to any individual who sought to move material under them, but it is customary, or at least it is done in some instances, isn't it, when a new railroad is under construction? It is not an

unusual practice for special tariffs to be put into effect for the purpose of moving the material of that line?

A. Yes, I think that is true.

Q. And it is of those tariffs you were speaking when you say the ton per mile rate?

A. Yes.

Q. Now, the difference between the amounts which you have allowed for rails and frogs and switches and track fastenings, and the amounts allowed in Mr. Darling's original exhibit, are all traceable to those differences in transportation?

A. Yes; I have not changed the quantities.

Q. Coming to the item of ballast, you allow for that 50 cents a yard?

A. Yes.

Q. Mr. Darling allows 66 cents?

A. Yes.

Q. And you justify the reduction of the figure as given by him, as I understood you this morning, upon the theory that for the construction of so large an amount of railroad as would be involved in the reproduction of a road like the Northern Pacific the cost per yard of ballasting would be considerably less than in the construction of short pieces of track?

A. I believe that would be true, yes.

Q. You assume that the ballasting would be done by contractors, do you?

A. Well, I hadn't assumed that it would be done either by the contractor—especially by a contractor or by the railroads; just simply undertook to get at what I believed to be a fair price for doing the work irrespective of who did it.

Q. As a matter of actual experience in the construction of railroads, Mr. Morgan, do contractors make lower prices for the construction, say, of 300 miles of railroad than they do of 150? Are their unit prices less?

A. That would be a difficult question to answer.

Q. Well, as a matter of general experience, so far as your observation goes?

A. Of course, I think that contractors would make a less price, for the reason that they would be justified in making a less price because the expense of getting their outfit in there would be better taken care of on a large contract than on a small one. You take and let a contract for a given piece of work, and you get units of price for doing various pieces of work which you could not get if they were separated one from the other.

Q. You would not expect a single contractor, for example, to reproduce the Northern Pacific system?

A. Hadn't thought of it, no; in fact, I hadn't thought about reproducing the Northern Pacific at all.

Q. You would expect that a large number of contractors would be engaged on that work, if any such work were to be undertaken, wouldn't you?

A. Yes.

Q. If it were feasible at all?

A. Yes, they would necessarily.

Q. And what would you consider a fairly large piece of work for a single contractor to undertake?

A. Well, that would of course depend on circumstances. A single contractor might take five or six hundred miles of line, perhaps more than that. If such a proposition were put up to be actually done, I don't think you would find a bit of difficulty in finding plenty of men in the United States to take the whole contract. That is the American spirit.

Q. But the contractor who took the original contract would himself subdivide it, wouldn't he?

A. Yes.

Q. That is, he would divide it up to a large number of subcontractors?

A. Yes.

Q. And the actual segment of track that would be under the supervision of a given individual for the construction of it would be much less than two hundred miles, would it not?

A. Yes.

Q. So that you would say that one hundred or at least two hundred miles would be a considerable stretch of railroad?

A. Yes, it is.

Q. For a contractor to be at work upon?

A. Yes.

Q. Now, then, if in point of fact the actual figures submitted by Mr. Darling show, and as I understand no criticism has been made and no errors have been detected by you in the exhibits introduced by him showing actual prices paid for work done in recent years,—if they show that the actual prices paid during the last five or six years on a stretch of track two hundred miles in length was 84 cents a yard for ballasting, wouldn't you consider that your 50 cents a yard was comparatively low?

A. Yes, I would; I would in respect to that particular line.

Q. Well, that would be a large piece of railroad?

A. Yes.

Q. Now, the item of contingencies, upon which Mr. Darling has allowed ten per cent. on the thirty-two items that precede on his exhibit, you have cut that allowance to five per cent.?

A. Yes.

Q. And the grounds upon which you have done that, as I understand it, are that you assume that these mythical reconstructors of this railroad start with the actual knowledge in their possession of all of the difficulties that were encountered by the original constructors of it during the course of the work?

A. Well, of course not all of them, Mr. Donnelly, but part of them.

Q. Well, you assume, at any rate, that these men who start to reconstruct it have, as an asset, when they start out already in their possession a knowledge of certain conditions that they are going to encounter, which the original constructors did not have because, it had never previously been constructed, and therefore you argue that a portion of the contingency charges should be eliminated because they are not contingency charges, being already known; isn't that true?

A. That is the idea, yes.

Q. And of course, that could not apply to any of those things that simply occur from time to time as the work would be carried on, whether it was work of reconstruction or work of original construction? It could not apply, for example, to such items as strikes or storms or such floods as have wiped out all of the grading done by the Northern Pacific in the Hellgate Canon in Montana, two years ago, could it?

A. No.

Q. And as a matter of actual practice, whereas it is the practice for engineers to allow ten per cent. for contingencies, they do very frequently run up much higher than that, don't they, sometimes to 50 and 75 per cent.?

A. The contingencies actually run?

Q. Yes.

A. Yes, sometimes they run higher, and a good many times the ultimate cost of the work is considerable less than the estimated cost.

Q. But so far as the actual estimates of work done here in recent years in Minnesota, for example, and as they have been put in evidence in this case, are you at all familiar with

the estimates that have been submitted at the request of the counsel on the other side?

A. No, I have not examined them.

Q. Now, I have not understood that you have assumed to say, Mr. Morgan, what would be a fair rate of interest charge?

A. No, I have not.

Q. You simply stated what the average rate of interest now paid by the Northern Pacific was upon the interest-bearing securities outstanding against the property?

A. That was all.

Q. Well, you would not say, would you, Mr. Morgan, that the rate of interest paid by an actually going concern upon a property which had for years been in existence, was anything like a fair measure of what the original constructors of a railroad property would have to pay for money to build a railroad not as yet in existence?

A. No.

Q. Now, you also stated that it was your judgment that the Northern Pacific Railroad, as it stands today, could be built in eight years.

A. Yes, that was my judgment.

Q. That is to say, the 2819 miles of main line, 2945 miles of branches, 270 miles of second track, 354 miles of spurs, and 1761 miles of yards and sidings, or a total of 8,151 miles, with all of their appurtenances, shops and everything about the system as it stands today, could be reproduced in eight years?

A. Yes, I think it could.

Q. Do you know of any instance in the history of the country of a railroad of any considerable magnitude being reproduced in as quick time as that? Relatively, I mean?

A. No, I do not.

Mr. Teal: Did you ever hear of any railroad being reproduced at all?

The Witness: No.

Q. Take for example the Milwaukee. Do you know the length of the coast extension of that road?

A. I think it is about 1400 miles.

Q. How long have they been in the construction of that road?

A. They were, I believe, just about three years from the time they commenced their surveys until they connected their rails.

Q. They have been at work upon it right along, have they not?

A. Oh, yes, they are working on it yet.

Q. And the Milwaukee coast extension as it stands today is not comparable, as regards its appurtenances, its shops and its depots and facilities of that kind, with a system like the Northern Pacific?

A. Probably not. I have not seen it of course; I have not been over the line.

Q. Or the condition of its road-bed, that would be your own natural inference at any rate, would it not?

A. Yes.

Q. Do you remember when the construction of that was begun, or the commencement of its surveys was begun?

A. I think it was inNovember, 1906, and completed through about the 15th of April, I believe, 1909.

Q You would not assume to say that it was not begun in October, 1905, would you,—the actual work of surveying for the coast extension?

A. Possibly it might have been, at different points.

Mr. Holden: We were speaking about it yesterday. We have a statement from the Milwaukee people that went into the Minnesota rate case on that subject.

Mr. Teal: I don't think any of this has anything to do with the reasonableness of rates.

Mr. Donnelly: As Mr. Walter says, we will argue that later on.

Q. Well, that has been generally regarded and spoken of all over the country as an instance of very remarkable railroad construction, hasn't it, Mr. Morgan?

A. Yes, it has been a good piece of construction.

Q. And if it has taken four years—

Mr. Walter: He said three years.

Mr. Donnelly: But I am assuming now the correct date is the date I have stated, and he is not certain that it is not true—October, 1905, to the present time—to put those 1400 miles of railroad in a condition less complete than was the corresponding mileage of the Northern Pacific. Would you still think that in twice that time the entire Northern Pacific system in its present state could be reproduced?

A. The conditions are entirely different with respect to the Milwaukee as compared with the Northern Pacific. The Milwaukee is building a main stem. Now when you get your main stem in, the lateral lines which you work out to create your system will grow much more rapidly.

Q. Very true, but you would have a main stem of the Northern Pacific nearly twice as long to build, wouldn't you, with all of the laterals besides?

A. I don't think twice as long.

Q. How?

A. Perhaps about twice as long.

Q. Now, you also stated that it was your judgment that the interest on the total cost of reproduction ought not to be computed for more than half the time. My judgment was that that would be a fair base to assume.

Q. In the construction of any railroad, one of the first concerns of the builders would be to insure their terminals, wouldn't it? They wouldn't want a railroad unless they knew they had points between which it was to run, that they had secured?

A. Yes, that might be true, although it would not be necessary to buy all the terminals at once. All you need is something to start with. Terminals never have been bought that way. Terminals are the result of years and years and years of purchases—gradual acquisition of the property and enlargement to meet the needs.

Q. Yes, undoubtedly they are and the existing terminals, say of the Northern Pacific, are the accumulations of years, but this entire thing is to be done in the period of twelve years, according to Mr. Darling's estimate, and eight years according to your own?

A. Yes.

Q. So that there would be some occasion for expedition in the matter of acquiring them wouldn't there?

A. Yes, there isn't any question about that, in the eighth year period, but that need not advance more rapidly than some other things. You would really have practically, for a large part of the terminals at least, a considerable length of time in which to purchase them.

Q. You would have a considerable time within which to purchase them?

A. Yes, within the whole period.

Q. But generally speaking it would be one of the first things that would need to be done?

A. Well, I should say that you would want to start on the purchase of terminals, if we can theorize on this proposition—it seems impossible to me—

Q. Well, of course it is largely theory from any standpoint, isn't it?

A. It is all theory, from every point.

Q. And it is theory from the standpoint of your own estimated cost of reproduction here in Minnesota, necessarily so, isn't it?

A. Yes.

Q. So that you are bound to theorize on it, and theorizing upon the assumption that the entire property is to be reproduced in as short a period of time as possible, you would say that it was important to insure at as early a date as practicable your terminal properties and your right of way over which the road was to be built?

A. Yes, I think I would begin to get options on it right away if I were going to do it.

Q. And the longer you delayed, the more it would cost you to get them?

A. Yes—unless you can keep under cover as the railroads are claiming they can.

Q. And as you say they can't.

Mr. Dillard: We haven't been able to do it.

Q. Now, of course your interest upon that item would be outstanding all of the time, wouldn't it? You would be subjected to an interest charge for the terminal item all the way through, right from the start?

A. Well, I presume that is so, if you want to buy all of your right of way.

Q. You say that would be the most expedient way to proceed?

A. No, I said I thought I would begin right away.

Q. As a matter of fact, the longer you postpone the acquisition of them the more the price would go up?

A. Well, I presume that is so, if it is to be regarded in the light of actual purchases of property.

Q. Speaking about the ballast in Minnesota, Mr. Morgan, you stated that some of the branch lines were not ballasted at all.

A. Yes.

Q. Some of them are in fact more heavily ballasted than the average ballast shown in the exhibit of Mr. Darling, are they not?

A. Well, of course that is undoubtedly true; that from time to time there has been ballast put on a line, it has worn itself out, worn itself into the solidification of the road. Three thousand yards of ballast per mile is a very liberal allowance for ballast.

Q. How many yards?

A. Three thousand yards. I think that is what Mr. Darling has used on his main lines, and half of that, I think, on branches.

Q. You would not undertake to say that there were not considerable stretches of both main line and branch lines in which the actual amount of ballasting was in excess of the average amount shown in his exhibit, would you?

A. No, I couldn't say that.

Q. As a matter of fact, do you not know that there are in Minnesota considerable stretches of main line and track where there is an excess of three thousand yards? Have you made any examination of that?

A. I presume that is so, although I do not recall any. I presume that it is natural that there would be more, but it has worked its way into the roadbed and probably does not show.

Q. I do not understand you claim, then, that the amount of ballasting as shown in Mr. Darling's exhibit is excessive.

A. I have not changed the figures or the quantities at all.

Q. Taking the item of track laying and surfacing: you figure that a reasonable amount per mile of track would be $700 as against $900 shown in Mr. Darling's exhibit.

A. Yes, that is right.

Q. And you justify that reduction, as I remember it, by a statement that the facilities for track laying had so far improved in recent years as to make it reasonable to suppose that it can be done for that figure.

A. Yes, I believe that it could be done for that figure.

Q. The exhibits introduced in connection with Mr. Darling's original exhibit showed that considerably more than that had in fact been paid for it, did they not, in recent years?

A. Yes, on the lines that are shown there.

Q. And during the years 1906, 1907, and 1908 these improved facilities were all available, were they not?

A. Yes.

Q. And you have already stated, I think, that a stretch of track of 200 miles would be a fair amount of track on which to form an estimate of the average cost for the system?

A. Oh no, I didn't; I said that would be a fair amount of work which a contractor would take.

Q. Didn't you also say that that would be about as large an amount as any one of the individual contractors or sub-

contractors at least would have under his control or supervision.

A. Well, that might be true, yes, sir.

Q. Do you think, then, that if the system were to be reproduced as a whole that there would be such a reduction of the price per mile of track laying, divided as the work of doing it would necessarily be, as would justify your reduction to a price of $700 from the price of $1269 actually shown to have been paid for 255 miles of road in 1908?

A. Yes, I do, considering the exhibit and from the investigations that I have made into the elements of cost.

Q. You say considering the exhibit. What do you mean by that?

A. For example, take the first item appearing there, shown as Minnesota lines.

Q. What are you looking at? To be sure that we have got the same sheet, what is the number?

A. I don't recollect what that number is.

Q. I am referring to that sheet in Mr. Darling's original or main exhibit entitled "Statement of actual cost of track laying and ballasting done by Northern Pacific Railway Company during the years 1906, 1907 and 1908."

A. Well, I haven't that statement.

Q. It was put in, I think, in connection with his original exhibit. I will show you this sheet, Mr. Morgan, showing actual prices paid during those years and showing that for a piece of track from Kennewick to Vancouver the actual prices paid for 255 miles were $1269. Those prices were paid notwithstanding the availability and use of the improved facilities that you have spoken of. Do you still think, after seeing that those actual prices have been paid, that $700 would be a fair average?

A. Yes, I do, because you find on there some costs that are very much less than the one to which you have referred.

Q. But do you find any of them that are as low as you have fixed for the average?

A. Not on your statement, but according to my investigation of the records I find some that are less.

Q. Have you produced any evidence of any that were less?

A. I have not so far; I have it here.

Mr. Walter: You might ask him, Mr. Donnelly.

Mr. Donnelly: I assume that you have put in your own testimony.

Mr. Walter: On cross-examination you can get it in detail.

Q. Do you mean that you have some of the Northern Pacific?

A. Yes, I have.

Q. Done in what years?

A. Take the Minnesota lines shown on that statement, where the cost is, I believe, given at $758.08. Now, I find from the accounts that there is a total charge of $134,541.55, from which is deducted the cost of putting the ballast under the track and rental of equipment, amounting to $89,370, leaving a proper cost of $45,171.44, and upon the mileage which is covered in these accounts, being 74.19 miles, the cost per mile is $608.86.

Q. You have a mileage there, you say, of 74 miles?

A. Yes, sir.

Q. Your mileage is different from the mileage as shown on this exhibit for that item?

A. Yes, I think that is probably so.

Q. It appears here as 62.62 miles?

A. Yes. Well, there were 54.17 miles of second main track; there was 1.58 miles of main track; there was the McHugh cutoff amounting to 1.51 miles, new side tracks amounting to 2.61; old track taking up and relaid for revision 6.37 miles; Glyndon to Moorehead, second track 7.95, making a total of 74.19 miles.

Q. Are you sure that you have the identical item there?

A. Well, I could not say that they are the identical item. Of course we have taken this out of the records chargeable to that work, and perhaps we could get a better one if we should take the Big Fork and International Falls. That is another illustration as shown there. Where the average cost, including the ballast put under, was $1556.14 a mile, the actual accounts should take out of that $695.41 per mile, leaving a net cost of $860.73. Now deduct from that charges for peeling ties, which was included in the cost of track laying, and the rental of equipment and trackage, and it would reduce the cost per mile, as we make it, to $692.90 as against $860.46 that is shown.

Q. On how many miles is that?

A. I haven't got the mileage on that here. I think it is the same mileage, though, that you would show.

Q. Both of the instances you have given are instances where the transportation charges would be comparatively low?

A. Yes, that is true.

Q. And where it would be unfair to accept them as representing an average for the system.

A. Well, to the best of my judgment, I think it ought to be done for $700 a mile.

Q. I know, but just answer the question as to transportation charges involved in these two items we have just been considering. It would be unfair to accept them as being a fair average for the system?

A. That might be true and it might not—I can't tell. It would all depend on the labor conditions. If you have to ship in a large amount of men, why, of course the transportation charges increase, but if we are going to proceed upon a hypothetical case—here is a great railroad that is to be built, that will draw labor from every part of this country, just as the Milwaukee has had labor drawn to it. It had a little trouble to start with, but when you have a large proposition to proceed with, men shift from one job to another and from one class of work to another. It is different on a little piece of work. Men come and go all the time, and you have got a constant circle of men coming and going from the work.

Q. But the market from which labor is usually drawn is generally from the East here, is it not?

A. Yes, generally from the East.

Q. The laborers, for example, that have built the Milwaukee Coast Extension have nearly all been sent out from here?

A. From this part of the country, I think, although there are a great many natives in there.

Q. As a general thing they have been sent from here and Chicago, have they not?

A. Oh, I think they have, yes.

By Mr. Dillard:

Q. Mr. Morgan, if I followed you correctly in your testimony with Mr. Holden, you stated that there was a good part of these roads outside of Minnesota that you had not been over prior to making your examination. Is that right?

A. Prior to making this examination?

Q. Making your statement, I mean, yes.

A. Yes, that is so.

Q. And you had to form your judgment as to those wherein you made your estimates, otherwise than where you got it from the company's books, according to your general knowledge of the country and the conditions surrounding those roads in the part of the country where you had not been? Is that right?

A. Yes, that is true to a certain extent. Of course, I have not attempted to make a reproduction estimate of these systems; I have just touched upon certain elements of cost.

Q. Yes, I understand that, but you have a pretty fair general opinion concerning the value of these roads as a whole, have you?

A. No, I haven't any opinion on that at the present time; I have not tried to make up an estimate of value.

Q. You did form a judgment, an estimate, as to their value per mile in Minnesota, did you not?

A. Yes, I did in Minnesota.

Q. Very carefully? Do you remember about what that was?

A. It is given right there in my report, I think. If I can find that report I think I can tell you in just a moment.

(Witness refers to report.)

Q. Per mile valuation for each one, if you have it there. Well, never mind, Mr. Morgan; we will just leave that out. Don't trouble about it.

A. Very well.

Q. There is this, if you can answer it, please: In a general way you know the Union Pacific property, what sort of property it is and how it is managed and run, and its general physical and operating conditions, do you not?

A. I have not been over the Union Pacific in a great many years, and while I know from what I have read of the property, what I know Mr. Harriman has done there, of course I know that the property has been reconstructed, regenerated, into a very fine property; I should judge so.

Q. You are pretty familiar with the country through which it passes, or were in years past, were you not?

A. Yes.

Q. Now, if you can answer this question I would like you to do so; if you cannot, I will not insist on it. From your general knowledge of the Union Pacific system, as a present going concern, how does it compare with the Northern Pacific and the Great Northern; that is, whether it is a property worth as much as either one of those roads or not? Just your best general estimate.

A. I don't believe I could answer that question in dollars and cents.

Q. I don't ask that; I don't ask you to give dollars and cents as to each one.

A. I think the Union Pacific is a very fine property. That is the best judgment I can give you.

Q. And in your judgment as good a property as either of the others, if you are free to answer that?

Mr. Walter: You mean mile for mile?

Mr. Dillard: Mile for mile.

Q. Do you think it is worth as much as either one of those properties, mile for mile, or not?

A. Mr. Dillard, I—

Q. Rather not answer it?

A. I would rather not answer the question.

Q. All right; I won't insist on it.

A. I have not investigated it sufficiently to justify an answer.

The defendant then rested.

The Master: Are you going to put in some more exhibits, Mr. Holden, or do you want to close your testimony now?

Mr. Holden: No; we simply want to check over the figures on the cost of transportation on the Columbia Falls to Rexford Line; but it is so insignificant a matter I may not refer to it again; because I do not want to go too far into details on a matter of this kind.

This closed the testimony, and it was agreed between counsel and the master that the time and place for the argument would be fixed later.

The following appendices "A" to "H" inclusive, show statements and information called for by counsel for defendant during cross-examination of certain witnesses produced by complainants. The page of the record where these statements were called for is shown upon each appendix.

APPENDIX "A."

(Page 87)

AREA AND VALUE AS TESTIFIED TO BY THOMAS COOPER IN THE LUMBER RATE CASE OF THE PORTION OF THE PROPERTY OF THE NORTHERN PACIFIC RAILWAY COMPANY IN THE CITY OF SEATTLE, WASHINGTON, NOT IN ACTUAL USE FOR RAILROAD PURPOSES, APRIL 1ST, 1909.

District	Area in Sq. ft.	Value per Sq. ft.	Total Value
Colorado St. Yard	915,527.00	1.75	$1,602,172.25
Block 370	222,920.00	1.75	390,110.00
Terminal Yard	1,213,903.00	2.50	3,034,757.50
Smith's Cove	3,976,466.19	.50	1,988,233.10
West Seattle	157,679.00	.75	18,929.25
Totals	6,486,495.19		$7,034,202.10

St. Paul, Minn.
May 4th, 1909.

THOMAS COOPER,
Land Commissioner,
Northern Pacific Railway Co.

APPENDIX "B."

(Page 91)

AREA AND VALUE AS TESTIFIED TO BY THOMAS COOPER IN THE LUMBER RATE CASE OF THE PORTION OF THE PROPERTY OF THE NORTHERN PACIFIC RAILWAY COMPANY IN THE CITY OF SEATTLE, WASHINGTON, LOCATED IN STREETS THAT HAVE BEEN VACATED BY THE CITY.

District	Area Sq. ft.	Value Sq. ft.	Total Value
Colorado St. Yard	101,500.	$1.75	$177,625.00
Terminal Yard	53,400.	2.50	133,500.00
Eight Ave. on "Bluff Line"	15,840.	3.00	47,520.00
Smith's Cove	142,854.	.50	71,427.00
One-half of vacated streets in Joint Terminal Yard	95,854.5	2.50	239,636.25
Totals	409,548.5		$669,708.25

NOTE: Streets where Railway Company provided new streets in place of those vacated are not included above.

St. Paul, Minn.,
May 4th, 1909.

THOMAS COOPER,
Land Commissioner,
Northern Pacific Railway Co.

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APPENDIX "C."

(Page 92)

SCHEDULE OF ALL DEEDS IN THE OFFICE OF THE LAND COMMISSIONER OF THE NORTHERN PACIFIC RAILWAY COMPANY UNDER WHICH THE PROPERTY AT SEATTLE, WASH., NOW OWNED BY SAID COMPANY, AND THE VALUE OF WHICH WAS TESTIFIED TO BY THOMAS COOPER IN THE LUMBER RATE CASE, WAS ACQUIRED BY SAID COMPANY, OR BY THE RAILROAD COMPANY, WHICH WAS ITS PREDECESSOR IN INTEREST, THE INTENTION BEING TO SHOW AS FAR AS PRACTICABLE THE COST OF THE PROPERTY WHEN FIRST ACQUIRED FOR RAILROAD PURPOSES.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
	D. H. Gilman	S. L. S. & E. Ry. Co	5,000.00	Maynard'd Plat
5/ 9-87	James M. Colman and wife	"	1.00	Railroad Ave. Property
5/13-87	Seattle Lumber & Commercial Co	"	nominal	"
5/27-87	Puget Mill Co	"	"	"
2/15-87	Amos Brown and wife	"	"	"
5/21-87	David Gilman and wife	"	1.00	"
2/12-87	Watson C. Squires	"	nominal	"
2/18-87	Carrie B. Hopkins	"	"	"
2/ 1-87	Arthur C. Denny and wife	"	"	"
6/ 6-87	Mrs. Susannah Brunn	"	"	"
2/ 1-87	H. H. Pease and wife	"	"	"
10/14-87	H. H. Pease and wife	"	"	"
2/ 4-87	Wm. Renton and wife	"	"	"
2/ 1-87	George Kinnear and wife	"	"	"
2/ 1-87	Schwabacher Bros. & Co	"	"	"
2/ 9-87	S. N. Sorenson and wife	"	"	"
2/ 3-87	John Leary and wife	"	"	"
2/ 1-87	H. A. Smith	"	"	"

Sheet 1—Continued.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
2/ 1-87	Thomas T. Minor and wife.....	S. L. S. & E. Ry. Co.	nominal	Railroad Ave. Property
3/ 9-87	E. P. Ferry and wife.....	"	1.00	"
3/11-87	Wm. Renton.....	"	nominal	"
4/ 1-87	Bailey Gatzert and wife.....	"	"	"
6/18-88	C. & P. S. Ry. Co.....	"	"	"
8/15-87	J. F. T. Mitchell.....	"	1,500.00	"
2/19-87	G. L. Manning *et al*	"	1.00	"
8/22-90	S. & E. Construction Co.....	"	nominal expressed 50,000.00 actual	Blk. 12, Bell & Denny's Addition
12/13-99	Julia S. Goodfellow *et al*.....	S. & I. Ry. Co.....	225.00	Railroad Ave. Property
8/ 3-00	C. K. Pike and husband.....	"	1.00	"
2/28-87	Wm. N. Bell and wife.....	S. L. S. & E. Ry. Co	nominal	"
2/ 4-87	Wm. Keene and Wife.....	"	"	"
1/15-96	Francis W. James.....	"	1.00	Smith's Cove Property
1/15-96	Francis W. James.....	"	1.00	"
2/ 8-87	Mary A. Calhoun.....	"	nominal	Railroad Ave. Property
2/ 1-87	D. T. Denny and wife.....	"	"	"
4/11-87	L. W. Foss and wife.....	"	"	"
2/ 2-87	James Dougan and wife.....	"	"	"
2/ 8-87	Wm. Selby.....	"	"	"
2/15-87	Wm. Carkeek *et al*.....	"	"	"
2/ 1-87	Granville O. Haller and wife.....	"	"	"
			56,732.00	

Sheet 2.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
2/ 7-87	J. W. Van Brocklin and wife.....	S. L. S. & E. Ry. Co.	nominal	Railroad Ave. Property
4/12-87	J. W. List and wife.....	"	"	"
2/ 2-87	H. H. Dearborn and wife.....	"	"	"
3/11-87	Luther Mann and wife.....	"	"	"
2/28-87	L. L. Andrews and wife.....	"	"	"
6/16-88	E. W. Holmes.....	"	600.00	Smith's Cove Property
4/ 6-87	Bailey Gatzert and wife.....	"	2,000.00	"
6/25-85	D. H. Gilman.....	"	525,000.00	"
3/ 5-87	Mary J. Ross.....	"	1.00	S. & I. Line
9/ 6-87	Thomas Burke and wife.....	"	nominal	" "
3/23-87	George Bowman and wife.....	"	"	" "
4/ 5-87	C. P. Stone and wife.....	"	"	" "
2/13-88	C. P. Stone and wife.....	"	1.00	" "
5/10-87	Wm. Ashworth and wife.....	"	nominal	" "
2/14-87	Wm. Ashworth and wife.....	"	1.00	" "
4/13-87	Nellie M. Hoskinson and husband	"	nominal	" "
2/ 6-88	Nellie M. Hoskinson and husband	"	1.00	" "
9/17-87	T. S. Sigvaldson.....	"	nominal	" "
4/13-87	George Dorffel and wife.....	"	"	" "
4/11-87	Wm. H. Llewellyn.....	"	"	" "
8/15-88	John Wackford.....	"	300.00	Burk's Addition
4/13-87	Hiram Burnett and wife.....	"	nominal	S. & I. Line
9/ 8-87	H. B. Bagley and wife.....	"	"	"
4/ 5-87	C. P. Stone and wife.....	"	"	"

Sheet 2—Continued.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
10/18-87	C. & P. S. Ry. Co.	S. L. S. & E. Ry. Co.	20.00	S. & I. Line
3/29-87	John C. Brantigan and wife.	"	nominal	"
5/16-87	Lydia Carr.	"	"	"
6/24-87	Isaac Dillon.	"	"	"
3/22-87	F. Toklas *et al*.	"	"	"
3/25-87	John H. McGraw	"	"	"
4/11-87	Morton C. Hunter	"	"	"
4/25-88	George R. Wilson.	"	1.00	"
4/6-87	Chas. Hilton	"	nominal	"
3/26-87	W. V. Reinhart and wife.	"	"	"
3/22-93	Michael Day	"	1,000.00	"
12/23-97	H. M. Haller *et al*.	S. & I. Ry. Co.	5,000.00	Smith's Cove Property
9/26-96	State of Washington	S. L. S. & E. Ry. Co	3.00	"
5/11-99	State of Washington	S. & I. Ry. Co.	90.50	Blk. 181, S. T. L.
5/11-99	State of Washington	"	589.00	Smith's Cove Property
5/11-99	State of Washington	"	458.00	"
5/11-99	State of Washington	"	44.86	Ballard Tide Lands
5/11-99	State of Washington	"	2,104.10	Smith's Cove Property
5/11-99	State of Washington	"	5,546.05	Railroad Ave. and Western Ave. Property.
2/13-99	Sol. G. Simpson	"	4,250.00	Blk. 181, S. T. L.
2/13-01	Carry Mill Co	"	1.00	Railroad Ave. Property
			547,011.51	

Sheet 3

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
2/ 6-96	Charles Lauch	S. L. S. & E. Ry. Co.	nominal	Railroad Ave. Property
4/22-01	State of Washington	S. & I. Ry. Co.	256.45	"
9/27-99	State of Washington	"	1.00	Blk. 181, S. T. L.
1/10-00	State of Washington	S.&S.F.Ry.&Nav.Co.	213.97	West Seattle Line
2/ 3-03	Andrew D. Keys and wife	"	1,180.00	"
2/27-03	American Lumber & Shingle.Co.	"	1,911.00	"
3/11-03	Sol. G. Simpson	"	1,211.20	"
3/30-03	Wm. Pigott	"	2,500.00	"
3/26-03	Ed. Cudichee	"	125,006.00	"
5/13-03	Northwestern Improvement Co.	"	3,639.23	"
9/23-03	State of Washington	"	51.00	"
7/22-04	Wm. S. Thompson and wife	N. P. Ry. Co.	1.00	New West Seattle Line
7/22-04	Wm. S. Thompson and wife	"	575.80	West Seattle Line
7/14-04	State of Washington	"	14.29	"
7/26-04	Wm. Pigott and wife	"	1.00	New West Seattle Line
7/15-04	Rose D. Lewis and husband	"	1,000.00	West Seattle Line
9/ 7-04	State of Washington	"	8.18	"
7/27-04	Thos. Flint *et al*	"	100.00	"
9/14-04	Ira Branson and wife	"	400.00	"
9/14-04	George Kinnear *et al*	"	3,813.60	"
10/ 3-04	James H. Lewis *et al*	"	912.50	"
10/14-04	A. C. Phillips	"	1.00	New West Seattle Line
10/17-04	R. B. Albertson and wife	"	1,250.00	West Seattle Line
6/28-04	State of Washington	"	23.91	"

Sheet 3—Continued.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
7/ 7-04	Alson L. Brown and wife	N. P. Ry. Co	1,500.00	West Seattle Line
10/21-04	J. T. Ronald and wife	"	1.00 expressed 16.00 actual	New West Seattle Line
12/ 5-04	Anna M. Gund and husband	"	1.00	"
1/23-05	Geo. H. Bixby et al	"	500.00	West Seattle Line
2/11-05	McNaught-Collins Imp. Co.	"	1,000.00	"
6/ 3-05	Henrietta M. Haller	"	1.00	New West Seattle Line
6/ 8-05	Chas. E. Burnside and wife	"	10.00	West Seattle Line
10/10-06	Ira Bronson et al	"	500.00	"
3/17-02	Morgan J. Carkeek and wife	"	125.00	Seattle Line
10/26-03	David Graham and wife	"	100.00	"
4/24-97	State of Washington	"	1,292.70	Colorado Street Yard
1/20-96	R. Sartori and wife	C. & P. S. R. R. and N.P.&P.S.S.R.R.	1.00 expressed 344.68 actual	Blk. 194, 197, S. T. L.
7/17-98	R. Sartori and wife	C. & P. S. R. R. Co. and N.P.Ry.Co.	1.00	Railroad Ave. Property
2/ 8-97	State of Washington	N. P. Ry. Co.	1,922.00	S. T. L., Blk. 198
12/12-96	State of Washington	"	631.74	"
			152,016.25	

Sheet 4.

DATE	GRANTOR	GRANTEE	CONSID-ERATION	DESCRIPTION
2/24-96	August Mehlhorn and wife	C. & P. S. R. R. Co. &N.P.&P.S.S.R.R	1.00	Railroad Ave. Property
5/ 8-96	Fred Gasch and wife	"	1.00	"
7/ 1-97	C. & P. S. R. R.	N.P.and P.S.S.R.R..	1.00 expressed 440.96 actual	Blk. 197, S. T. L.
1/28-95	Alanson S. Dunham et al	Thos. F. Oakes, Trustee	1.00 expressed 175,000.00 actual	Yesler Wharf
11/15-97	Clise Investment Co.	C. & P. S. R. R. and N.P.&P.S.S.R.R..	39.13	Railroad Ave. Property
2/ 1-96	Charles Hopkins and wife	"	1.00	"
2/19-96	Union Trust Co.	"	1.00	"
2/20-96	Eliza D. Starr	"	1.00	"
2/15-96	Amos Brown and wife	"	1.00	"
2/24-96	Puget Mill Co	"	1.00	"
11/ 9-96	State of Washington	N. P. Ry. Co.	713.21	"
11/ 4-96	The Commercial Co	"	9,582.41	"
2/14-96	Arthur A. Denny and wife	C. & P. S. R. R. Co. & N. P. & P. S. S. R. R. Co.	1.00	"
2/13-96	Charles A. Kinnear	"	1.00	"
2/20-96	A. W. Edwards and wife	"	1.00	"
2/13-96	J. J. Post and wife	"	1.00	"
8/31-97	A. H. Denman	"	1.00	"
2/14-96	Hiram H. Pease and wife	"	1.00	"
2/14-96	Mrs. J. Brunn	"	1.00	"

Sheet 4—Continued.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
1/29-97	C. & P. S. R. R. Co.	N. P. Ry. Co.	1.00 expressed 500.00 actual	Railroad Ave. Property
2/13-96	David Gilmore and wife	C. & P. S. R. R. Co. & N. P. & P. S. S. R. R. Co.	1.00	"
11/18-97	C. & P. S. R. R. Co.	N. P. & P. S. S. R. R. Co.	1.00	"
11/12-97	C. & P. S. R. R. Co.	"	1.00	"
4/30-97	Seattle Tide Land Co.	N. P. & P.S.S.R.R.& C.& P.S.R.R.	500.00	Elliott Ave. Line
5/ 3-97	John Leary and wife	C. & P. S. R. R. Co. & N. P. & P. S. S. R. R.	Exchanged for other property	Railroad Ave. Property
11/27-96	Gatzert-Schwabacher Land Co.	"	"	"
9/ 1-98	State of Washington	N.P.&C.&P.S.R.R.	383.36	Western Ave. Property
7/12-98	State of Washington	N. P. Ry. Co.	168.60	Blk. 198, S. T. L.
5/ 2-98	State of Washington	"	105.19	Old Hop House Site
9/15-98	State of Washington	"	109.40	"
9/19-98	Gatzert-Schwabacher Land Co.	C. & P. S. R. R. Co. & N. P. & P. S. S. R. R.	Exchanged for other property	Railroad Ave. Property
10/ 3-99	C. J. Smith and wife	N. P. Ry. Co.	5.00 expressed 121,217.93 actual	Western Ave. Property & Blk. 181, S. T. L.
8/25-99	Puget Sound National Bank	"	40,000.00	Blk. 198, S. T. L.
8/15-99	State of Washington	C. & P. S. R. R. & N. P. Ry. Co.	45.48	Western Ave. Property
			348,822.67	

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Sheet 5

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
9/ 1-99	Dexter Horton & Co	N. P. Ry. Co.	$55,000.00	Block 198, S. T. L.
8/31-99	Mary A. Denny et al	"	40,000.00	"
1/16-00	C. J. Smith and wife	"	5.00 expressed 2,566.68 actual	Colorado Street Yard
3/ 5-00	C. J. Smith and wife	"	5.00 expressed 334.00 actual	"
5/19-00	C. J. Smith and wife	"	5.00 expressed 525.00	"
11/17-99	C. J. Smith and wife	"	5.00 expressed 10,881.93 actual	"
5/11-99	State of Washington	S. & I. Ry. Co.	12,623.23	Smith's Cove Property, Railroad Ave. Loop
12/11-01	King County	N. P. Ry. Co.	700.00	At Argo
8/31-00	George W. Hyde and wife	"	850.00	Near Argo
6/22-00	Wm. R. Brawley and wife	"	1.00	Colorado Street Line
7/20-00	Dexter Horton & Co. et al	"	6,035.60	Duwamish Ave. Line
6/20-00	George Kinnear et al	"	3,554.25	Across Island No. 1
1/17-96	Morgan J. Carkeek and wife	S. L. S. & E. Ry. Co.	nominal	Railroad Ave. Property
1/17-96	Morgan J. Carkeek et al	"	"	"
1/30-96	Granville O. Haller and wife	"	1.00	"
2/ 7-96	Mary A. Gaffney	"	1.00	"
1/31-96	J. W. Clise et al	"	1.00	"
2/29-96	R. & B. Winsor and wife	"	1.00	"

Sheet 5—Continued

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
1/13-03	Wm. R. Brawley et al.	N. P. Ry. Co.	$ 6,406.20	Across Island No. 1
2/18-03	Wm. R. Brawley et al.	"	4,560.00	Across Island No. 1 on Walla Walla Ave.
10/15-02	C. & P. S. Ry. Co.	"	Exchanged for other property	Seattle Line
3/13-03	Rainier Invest. Co.	"	5,335.00	Duwamish Ave. Line
4/24-03	King Co. et al.	"	350.00	Argo
6/13-02	Smith's Cove Land Co.	"	820.00	Interbay
5/30-03	Thomas Burke and wife	"	1.00	S. & I. Line
8/14-03	N. W. I. Co.	"	1.00 expressed 500.00 actual	Argo
11/11-03	N. W. I. Co.	"	1.00 expressed 1,000.00 actual	"
12/ 9-03	Geo. W. McFarlane and wife	"	700.00	Near Argo
12/ 9-03	Geo. W. McFarlane and wife	"	100.00	Argo
3/ 9-91	John L. Simpson.	N.P.&P.S.S.R.R.	2,530.00	Near Argo
4/ 3-91	W. C. Painter et al.	"	10,996.64	Painter's Add.
4/ 3-91	Noble C. Wallingford and wife.	"	6,605.83	Wallingford's Add.
1891	Frank D. Black and wife.	"	7,500.00	Black's Elliott Bay Add.
4/ 3-91	W. S. Ladd et al.	"	22,146.44	Duwamish Ave. Line
4/ 3-91	W. S. Ladd et al.			Duwamish Ave. Line
			202,626.80	

Sheet 6.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
1/ 7-04	C. & P. S. R. R. Co.	N. P. Ry. Co.	Exchanged for other property	Railroad Ave. Property
6/25-04	George L. Aggers and wife	"	85.00	Argo
8/ 4-04	Hattie M. Vandewater and husband	"	200.00	"
6/29-04	Portland Cordage Co.	"	Exchanged for other property	Smith's Cove Property
11/23-04	Ernst Portway	"	100.00	"
3/16-05	Rainier Investment Co	"	1.00	Colorado St. Line and 2nd Ave. S. Line
12/12-04	George Kinnear et al	"	Exchanged for other property	Island No. 1
8/10-05	C. & P. S. R. R. Co.	"	"	Inshore Line
8/10-05	C. & P. S. R. R. Co.	"	"	"
8/10-05	C. & P. S. R. R. Co.	"	"	"
11/16-07	S. & M. Ry. Co	"	1.00 expressed	Joint Yard
11/16-07	S. & M. Ry. Co	"	1.00 expressed	"
11/16-07	S. & M. Ry. Co	"	1.00 expressed	"
11/16-07	S. & M. Ry. Co	"	1.00 expressed	Joint Yard and Tunnel
4/ 1-08	G. N. Ry. Co.	"	1.00 expressed 1,873,856.66 actual	Joint Yard

Sheet 6—Continued.

DATE	GRANTOR	GRANTEE	CONSIDERATION	DESCRIPTION
3/19-08	State of Washington	N. P. Ry.Co.	$ 7,002.00	S. & I. Line-Edgewater
5/15-08	George Kinnear et al	"	10,572.00	New West Seattle Line
11/ 7-08	O. & W. R. R. Co.	"	10.00 expressed 18,870.80 actual	Duwamish Ave. Line
6/24-08	O. & W. R. R. Co.	"	10.00 expressed	Seattle Line
7/24-08	O. & W. R. R. Co.	"	10.00 expressed 24,660.16 actual	"
10/ 7-07	O. & W. R. R. Co.	"	10.00 expressed 3,164.28 actual	"
1/ 2-08	W. F. McFarland and wife	N. W. I. Co.	23,483.00	Fremont-Ballard Line
1/ 2-08	John M. Hughes	"	3,450.00	"
1/16-08	George A. McPherson	"	1,220.00	"
			1,966,664.90	

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Sheet 7.

DATE	GRANTOR	GRANTEE	CONSID-ERATION	DESCRIPTION
6/25-08	George A. McPherson	N. W. I. Co.	$ 2,700.00	Fremont-Ballard Line
6/23-08	Lester B. Elwood and wife	"	2,150.00	"
8/19-08	Lester B. Elwood and wife	"	14,500.00	"
8/13-08	John M. Hughes	"	1,100.00	"
9/ 9-08	George A. McPherson	"	1,100.00	"
8/19-08	Lester B. Elwood and wife	"	350.00	"
9/ 9-08	George A. McPherson	"	1,350.00	"
8/ 7-08	John M. Hughes	"	5,000.00	"
8/19-08	Lester B. Elwood and wife	"	390.00	"
8/19-08	Lester B. Elwood and wife	"	2,600.00	"
8/28-08	Lester B. Elwood and wife	"	3,150.00	"
8/28-08	Lester B. Elwood and wife	"	800.00	"
11/12-08	Boulevard Syndicate Inc	"	7,500.00	"
10/27-08	Wm. H. Gates and wife	"	2,250.00	"
10/29-08	Perry E. Barnum and wife	"	2,500.00	"
1/ 7-09	Lester B. Elwood and wife	"	5,500.00	"
2/15-09	Henry S. Butler	"	103,075.00	Terry Ave. Property
2/15-09	Henry S. Butler	"	24,910.15	"
2/ 9-09	Denny Land Co	"	21,600.00	Fremont-Ballard Line
2/ 9-09	N. T. Thurlow	"	5,250.00	"
2/ 9-09	Nathan P. Myhre	"	5,000.00	Lake Union Line
2/12-09	Henry Bridger	"	1,700.00	"
8/27-08	M. L. Walker and wife	"	7,950.00	"
7/24-08	Henry Jensen	"	6,200.00	"
7/24-08	George Hart	"	1,500.00	Fremont-Ballard Line
2/27-09	John Paulson	N. P. Ry. Co.		

Sheet 7—Continued.

DATE	GRANTOR	GRANTEE	CONSID-ERATION	DESCRIPTION
2/27-09	W. Johnson	N. P. Ry. Co.	$ 3,000.00	Fremont-Ballard Line
2/27-09	Goldberg Paulson	"	1,500.00	"
2/27-09	Rene Hilleware	"	3,000.00	"
2/27-09	Cornelius A. Heneken	"	6,000.00	"
2/27-09	Emma A. Shumway	"	6,000.00	"
3/ 4-09	C. A. Remsberg	"	1,500.00	"
3/ 4-09	Rex J. Ross	"	1,575.00	"
3/ 1-09	Ida G. Sparkman	"	3,150.00	"
2/27-09	G. A. Lombard et al	"	1,250.00	Lake Union Line
3/ 6-09	The Seattle Seminary	"	17,500.00	Terry Ave. Property
3/ 6-09	C. J. Kearney	"	6,000.00	Lake Union Line
3/ 6-09	Denny Land Co	"	900.00	Fremont-Ballard Line
3/ 6-09	C. H. Burnett	"	1,250.00	"
3/ 8-09	Ella B. Whitworth White	"	3,200.00	"
3/ 9-09	L. C. Crawford	"	2,500.00	"
3/ 9-09	Jacob Furth	"	70.92	Lake Union Line
3/10-09	E. B. Newell	"	1,500.00	Fremont-Ballard Line
3/10-09	Louis Holmes	"	7,500.00	"
3/10-09	B. B. Stuart	"	412.97	"
			297,934.01	

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Sheet 8.

DATE	GRANTOR	GRANTEE	CONSID-ERATION	DESCRIPTION
3/10-09	S. P. Dixon	N. P. Ry. Co.	$ 250.00	Lake Union Line
3/ 6-09	Mary McCormack	"	439.80	"
3/17-09	S. P. Dixon	"	320.40	Fremont-Ballard Line
3/17-09	I. A. Fay	"	3,000.00	"
3/30-09	Mary J. Ross	"	12,800.00	"
			16,810.20	

RECAPITULATION.

Sheet 1	$ 56,732.00
Sheet 2	547,011.51
Sheet 3	152,016.25
Sheet 4	348,822.67
Sheet 5	202,626.80
Sheet 6	1,966,664.90
Sheet 7	297,934.04
Sheet 8	16,810.20
Total	$3,588,618.37

NOTE.—Wherever deeds showed a nominal consideration and the actual consideration could be ascertained, the latter has also been inserted in the schedule.

THOMAS COOPER,
Land Commissioner, Northern Pacific Railway Co.

St. Paul, Minn., June 7, 1909.

APPENDIX "D."

(Page 93.)

AREA AND VALUE AS TESTIFIED TO BY THOMAS COOPER IN THE LUMBER RATE CASE OF THE PORTION OF THE PROPERTY OF THE NORTHERN PACIFIC RAILWAY COMPANY IN THE CITY OF SPOKANE, WASHINGTON, NOT IN ACTUAL USE FOR RAILROAD PURPOSES, APRIL 1ST, 1909.

District.	Area in Sq. ft.	Value per Sq. ft.	Total Value.
Bernard to Washington St.	39,900	$3.50	$209,650.00
Washington to Stevens St.	35,625	4.20	149,625.00
Stevens to Howard St.	35,625	4.31	153,543.75
Howard to Mill St.	47,963	4.73	226,864.99
Mill to Post St.	35,625	4.55	162,093.75
Post to Lincoln St.	33,750	3.50	118,125.00
Lincoln to Monroe St.	75,750	3.22	243,915.00
Monroe to Madison St.	75,750	2.80	212,100.00
Madison to Jefferson St.	77,375	2.45	189,568.75
Jefferson to Adams St.	77,250	1.75	135,187.50
Adams to Cedar St.	65,940	1.54	101,547.60
Totals.	620,553		$1,902,221.34

Annual rental derived from the portion of the above property which has been leased—$12,962.00.

St. Paul, Minn.,
May 4th, 1909.

THOMAS COOPER,
Land Commissioner Northern Pacific Ry Co.

APPENDIX "E."
(Page 94.)

AREA AND VALUE AS TESTIFIED TO BY THOMAS COOPER IN THE LUMBER RATE CASE OF THE PORTION OF THE PROPERTY OF NORTHERN PACIFIC RAILWAY COMPANY IN THE CITY OF TACOMA, WASHINGTON, NOT IN ACTUAL USE FOR RAILROAD PURPOSES, APRIL 1ST, 1909.

District.	Area in Acres.	Value per Acre.	Total Value.
Part of Lot 4, Sec. 3-20-3	2.075	$ 8,000.00	$ 16,600.00
Blocks 7136, 7138 and 7237	1.129	23,511.22	26,544.17
Lot 6, Sec. 4-20-3	5.367	10,000.00	53,670.00
Lot 7, Sec. 4-20-3	.439	10,000.00	4,390.00
Tide Land, Blk. 53	28.929	10,000.00	289,290.00
Tide Land, Blk. 51	4.896	15,000.00	73,440.00
Blk. "A" N. P. Ry. Co's plat	61.328	19,311.59	1,184,341.19
Car Shop Property, Sec. 13-20-2	46.956	1,000.00	46,956.00
Car Shop Property Clement's 2nd Addition	5.000	1,000.00	5,000.00
2 Tracts in Neisson D. L. C. Sec. 24-20-2	8.909	1,500.00	13,363.50
Totals	165.028		$1,713,594.86

Annual rental derived from portion of above property which has been leased—$1,280.00.

St. Paul, Minn.,
May 4th, 1909.

THOMAS COOPER,
Land Commissioner Northern Pacific Railway Co.

APPENDIX "F."

(Page 474.)

NORTHERN PACIFIC RAILWAY COMPANY.

LIVINGSTON TO MUIR.

COMPARISON BETWEEN THE APPROXIMATE ESTIMATE OF COST DATED JUNE 1ST, 1906, AND THE ACTUAL COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimate June 1st, 1906.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr. Pd. Cntr.	Cost.
Engineering	.....	.....	$ 22,600.00	.....	.....	$ 21,623.06
Right of Way and Station Grounds	.....	.....	3,500.00	.....	.....	11,156.45
Clearing and Grubbing	.....	.....	125.00	.....	.....	90.22
GRADING:						
Earth	845,000	18c.	152,100.00	168,554	19c.	32,025.26
Earth	.....	.....	.....	94,646	23c.	21,768.56
Hard Pan	.....	.....	.....	311,592	35c.	109,057.20
Loose Rock	110,000	40c.	44,000.00	8,150	40c.	3,260.00
Solid Rock	300,000	90c.	270,000.00	773,218	90c.	695,896.20
Solid Rock, Borrow	.....	.....	.....	47,404	55c.	26,072.20
Total Yardage	1,255,000	.....	.....	1,403,564	.....	.....
Overhaul	2,510,000	1c.	25,100.00	5,411,095	1c.	54,110.95
Overhaul	196,400	20c.	39,280.00	.....	.....	.....
Train service	.....	.....	1,350.00	.....	.....	.....
Extra bills, extra work by Company force, transportation of men, tools and plant	.....	.....	.....	.....	.....	101,373.70
Tunnels	.....	.....	64,400.00	.....	.....	76,818.29
Bridging	.....	.....	15,500.00	.....	.....	27,381.58
Ties	.....	.....	24,594.00	.....	.....	36,765.84

	Original Approximate Estimate June 1st, 1906.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Rails			$ 48,500.00			$ 102,314.07
Track Fastenings			12,501.00			11,664.65
Frogs and Switches			1,000.00			3,006.01
Ballast			22,500.00			37,398.97
Tracklaying and Surfacing			10,500.00			27,150.67
Fencing Right of Way			1,500.00			124.88
Crossings and Signs			250.00			95.80
Telegraph and Telephone Lines			750.00			1,611.94
Water Stations						8,379.11
Miscellaneous Structures			1,450.00			380.09
Trans. of men and material			*17,000.00			†72,355.01
Rent of Equipment						456.00
Stationery and Printing						10.90
Store account						920.21
			$778,500.00			$1,483,267.82

*This item includes all charges to transportation of men, tools and material.

†This item includes all charges to transportation of men, tools and material for the period up to July 1st, 1907. After that date distribution has been made in accordance with the Interstate Commerce classification and transportation charges have been made against accounts benefited.

APPENDIX "F."

Northern Pacific Railway Company.

Garrison to Missoula Revision of Line and Grade.

COMPARISON BETWEEN THE APPROXIMATE ESTIMATE OF COST DATED JUNE 14TH, 1907, AND THE ACTUAL COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimate June 14th, 1907.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Engineering			$ 102,533.00			$ 131,489.97
Right of Way and Station Grounds			105,251.00			134,686.10
Clearing and Grubbing			7,925.00			23,893.30
GRADING:						
Earth hauled 300 feet	441,040	30c.	132,336.00	1,407,443	19c.	267,414.17
Earth hauled 300 to 1000 feet	3,054,465	23	702,527.00	1,641,613	23	377,270.99
Hard Pan				857,929	37	317,433.73
Shell Rock				26,282	32	8,410.24
Loose Rock	156,200	42	65,604.00	134,500	42	56,490.00
Solid Rock	410,053	95	389,551.00	709,758	95	674,270.10
Solid Rock, Borrow				7,110	55	3,910.50
Grade Raising Material				94,154	27	25,421.58
FILLING WASHOUTS:						
Earth				97,816	15	14,672.40
Earth haul 300 feet				33,943	19	6,449.17
Earth haul 300 to 1000 feet				248,306	23	57,110.38
Hard Pan				157,988	37	58,455.56
Loose Rock				5,735	42	2,408.70
	4,061,758			5,422,627		
Overhaul	13,099,600	01	130,996.00	20,946,353	01	209,463.53

	Original Approximate Estimate June 14th, 1907.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Overhaul, washout filling				2,909,622	01	$ 29,096.22
Extra Bills, extra work by the Company forces, transportation of men, material and plant						258,572.61
Protection of banks			$ 60,250.00			74,445.01
Tunnels			390,331.00			687,531.67
Bridges, Trestles and Culverts			575,919.00			888,849.68
Ties			135,713.00			189,542.22
Rails			324,342.00			445,390.60
Frogs and Switches			10,358.00			16,276.04
Track fastenings and other material			125,852.00			155,560.89
Ballast			219,086.00			157,816.32
Track laying and Surfacing						194,495.33
Fencing Right of Way			6,374.00			1,669.29
Crossings and Signs			9,711.00			2,476.59
Interlocking and other signal apparatus						2.80
Telegraph and Telephone Lines			5,427.00			
Station Buildings and Fixtures			2,000.00			134.41
Water Stations			7,000.00			3,823.20
Transportation of men and material						517.78
Rent of Equipment						18,848.83
Repairs Equipment						2,002.89
Stationery and Printing						396.90
Taxes						103.56
Miscellaneous Buildings			1,200.00			
			$3,510,266.00			$5,496,803.26

APPENDIX "F."

NORTHERN PACIFIC RAILWAY COMPANY.
WHITE PINE HILL GRADE REVISION.

COMPARISON BETWEEN THE APPROXIMATE ESTIMATES OF COST DATED FEBRUARY 14TH, 1907, AND THE ACTUAL COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimate February 14, 1907.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Engineering			$ 79,761.90			$ 39,285.33
Right of Way and Station Grounds			15,375.00			37,835.80
Clearing and Grubbing			14,815.00			36,078.71
GRADING:						
Earth hauled 300 feet or less	800,000	20c.	160,000.00	136,250	20c.	27,250.00
Earth hauled 300 to 1000 feet	1,400,000	23	322,000.00	331,595	24	79,582.80
Hard Pan				174,791	37	64,672.67
Cemented Gravel	185,000	35	65,092.00	774,656	40	309,862.40
Loose Rock	87,780	40	35,112.00	371,219	45	167,048.55
Solid Rock	315,161	100	315,161.00	817,023	95	776,171.85
Total Yardage	2,787,941			2,605,534		
Overhaul	10,511,780	01	105,117.80	13,224,584	01	132,245.84
Extra Bills, extra work by Company force, transportation of men, tools and plant						131,879.46
Bridges, Trestles and Culverts			143,640.50			178,580.68
Ties			35,389.90			77,821.28
Rails			124,636.00			157,981.61
Track fastenings			27,109.24			40,198.38
Frogs and Switches			1,326.40			2,931.89

	Original Approximate Equipment February 14, 1907.			Cost to February 28, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr. Pd. Cntr.	Cost.
Ballast			$ 20,627.75			$ 57,251.69
Tracklaying and Surfacing			20,226.45			46,043.85
Fencing Right of Way			5,340.00			219.04
Crossings and Signs			588.00			4,701.21
Telegraph and Telephone Lines						
Station Buildings and Fixtures			1,075.00			2,820.88
Water Stations			3,400.00			15,382.39
Fuel Stations						11,674.81
Miscellaneous Structures			3,525.00			
Transportation of men and materials			*175,889.06			†25,089.51
Rent of Equipment						4,708.63
Repairs of Equipment						3.09
Stationery and Printing						47.44
Insurance						137.40
Taxes						59.20
Construction Equipment			500.00			56.61
Store Account						27,665.19
Operating Expenses and Earnings			500.00			
Totals			$1,676,208.00			$2,455,288.19

*This item includes all charges to transportation of men, tools and material.

†This item includes all charges to transportation of men, tools and material for the period up to July 1st, 1907. After that date distribution has been made in accordance with the Interstate Commerce classification and transportation charges have been made against accounts benefited.

APPENDIX "F."

NORTHERN PACIFIC RAILWAY COMPANY.
ST. REGIS TO PARADISE.
COMPARISON BETWEEN APPROXIMATE ESTIMATE OF COST DATED JANUARY 15TH, 1907, AND THE COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimate January 15th, 1907.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Engineering			$ 42,157.50			$ 64,622.51
Right of Way and Station Grounds			4,500.00			19,155.55
Clearing and Grubbing			15,600.00			20,204.19
GRADING:						
Earth	390,000	19c.	74,100.00	200,465	19c.	38,088.35
Earth	825,000	21	173,250.00	418,159	23	96,176.57
Hard Pan				771,384	37	285,412.08
Shell Rock				95,550	32	30,576.00
Loose Rock	280,000	42	117,600.00	229,447	42	96,367.74
Solid Rock	190,000	95	180,500.00	210,806	95	200,265.70
Solid Rock, Borrow				22,120	55	12,166.00
Total Yardage	1,685,000			1,947,931		
Overhaul	5,000,000	1	50,000.00	8,515,565	1	85,155.65
Extra bills, extra work by force account, transportation of men, material and plant						55,466.81
Protection of Banks			15,600.00			71,189.25
Tunnels			83,750.00			221,286.80
Bridges, Trestles and Culverts			404,717.20			711,114.45
Ties			23,302.80			51,877.26
Rails			105,390.00			120,924.34

APPENDIX "F."

NORTHERN PACIFIC RAILWAY COMPANY.

VALLEY CITY CHANGE OF LINE (ALTA TO BEREA).

COMPARISON BETWEEN THE APPROXIMATE ESTIMATES OF COST AND THE ACTUAL COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimate February 28, 1906, February 13, 1907 and July 21, 1907.			Cost to February 28, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr. Pd.Cntr. Average	Cost.
Engineering			$ 37,238.00			$ 19,025.48
Right of Way and Station Grounds			13,000.00			44,413.87
Clearing and Grubbing						
GRADING:						
Earth	674,400 1,000	21c. 20	141,824.00	725,994	29.5c	214,168.23
Extra bills, extra work by Company force, transportation of men, tools and equipment						85,005.76
Protection of Banks						2,363.04
Bridges, Trestles and Culverts			574,700.00			726,896.84
Ties			14,533.00			31,502.74
Rails			45,192.00			47,192.40
Frogs and Switches			569.00			241.07
Track Fastenings			6,546.00			5,674.61
Ballast			20,490.00			15,300.38
Track Laying and Surfacing			5,754.00			28,875.14
Fencing Right of Way			1,500.00			927.46
Crossings and Signs			350.00			4,474.37
Telegraph and Telephone Lines			1,500.00			

	Original Approximate Estimate February 28, 1906, February 13, 1907 and July 21, 1907.			Cost to February 28, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr. Pd,Cntr. Average	Cost.
Station Buildings and Fixtures			$ 2,500.00			$ 188.46
Water Stations			5,600.00			15,923.61
Miscellaneous Structures			11,400.00			21,921.04
Transportation of Men and Material			*39,474.00			†16,092.88
Rent of Equipment			17,118.00			16,984.54
Repairs Equipment						
Stationery and Printing						9.87
Insurance						6.00
Other Expenditures						140.45
Injuries to Persons						5,000.20
Undistributed Bills						762.73
Totals			$ 939,288.00			$1,303,091.17

*This item includes all charges to transportation of men, tools and material.

†This item includes all charges to transportation of men, tools and material for the period up to July 1st, 1907. After that date distribution has been made in accordance with the Interstate Commerce classification and transportation charges have been made against accounts benefited.

	Original Approximate Estimate January 15th, 1907.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Frogs and Switches			$ 1,200.00			$ 1,243.06
Track Fastenings and Other Material			20,954.50			29,463.26
Ballast			21,375.00			19,578.60
Tracklaying and Surfacing			10,950.00			33,124.03
Roadway Tools						3,378.65
Fencing Right of Way			840.00			4,060.66
Crossings and Signs			650.00			1,690.00
Interlocking and other Signal Apparatus						11.56
Telegraph and Telephone Lines			3,300.00			2,136.41
Station Buildings and Fixtures			6,000.00			
Shops, Engine House and Turn Tables						96.07
Water Stations			5,000.00			423.01
Miscellaneous Structures			3,000.00			5,952.55
Transportation of Men and Material			*83,005.00			†35,627.94
Rent of Equipment						4,173.75
Repair of Equipment						1,283.62
Stationery and Printing						172.81
Insurance						86.45
Taxes						78.86
Undistributed bills						62.55
Total			$1,446,742.00			$2,322,693.09

*This item includes all charges to transportation of men, tools and material.

†This item includes all charges to transportation of men, tools and material for the period up to July 1st, 1907. After that date distribution has been made in accordance with the Interstate Commerce classification and transportation charges have been made against accounts benefited.

APPENDIX "F."

NORTHERN PACIFIC RAILWAY COMPANY.
LINE FROM MANDAN SOUTH SEVENTY-TWO MILES.

	Original Approximate Estimate February 15th, 1908.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Engineering			$ 130,565.36			
Right of Way and Station Grounds			42,203.00			
Clearing and Grubbing			3,200.00			
GRADING:						
Earth	1,909,000	20c.	381,800.00			
Hard Pan	1,349,000	35	472,150.00			
Loose Rock	100,000	45	45,000.00			
Solid Rock	346,000	80	276,800.00			
Overhaul	4,635,100	01	46,351.00			
Train service and Rent of Equipment			6,840.00			
Protection of Banks			28,225.00			
Contingencies			63,858.30	NO WORK DONE.		
Bridges, Trestles and Culverts			135,839.00			
Ties			128,429.00			
Rails			346,556.00			
Track Fastenings			84,296.00			
Frogs and Switches			4,620.00			
Tracklaying and Surfacing			91,773.00			
Ballast			87,329.00			
Station Buildings and Fixtures			17,610.00			
Water Stations			33,250.00			
Fuel Stations			10,000.00			
Fencing Right of Way			21,600.00			
Snow Fencing			25,344.00			

	Original Approximate Estimate February 15th, 1908.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Unit Pr.Pd. Cntr.	Cost.
Stock Yards			$ 4,900.00	NO WORK DONE.		
Crossings, Cattle Guards and Signs			2,920.00			
Section and Tool Houses			13,600.00			
Miscellaneous Structures			6,440.00			
Telegraph Lines			7,200.00			
Transportation Charges			223,174.00			
			$2,741,872.66			

APPENDIX "F."

NORTHERN PACIFIC RAILWAY COMPANY.
LAKE PARK TO GLYNDON.

COMPARISON BETWEEN THE APPROXIMATE ESTIMATES OF COST AND THE ACTUAL COST TO FEBRUARY 28TH, 1909.

	Original Approximate Estimates of Jan. 26, 1906, Jan. 27, 1906, Feb. 8, 1906, and May 20, 1908			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Cntr. Pr.& Pr.Co. Work.	Cost.
Engineering			$ 102,076.00			$ 65,178.41
Right of Way and Station Grounds			109,925.00			172,909.26
Clearing and Grubbing			1,200.00			11,583.56
GRADING:						
Earth	3,387,900	15c.	508,185.00	17,398	12.48c.	2,171.27
Earth	235,000	17	39,950.00	58,345	16.64	9,708.61
Earth	300,000	17.5	52,500.00	691,942	18.72	129,531.54
Earth	950,000	20.558	195,301.00	67,784	26	17,623.84
Earth	700,000	20.4	142,800.00	115,384	29.12	33,599.82
Earth (by Company forces)				4,975,895	29.5835	1,472,043.90
Loose Rock				59,562	36.4	21,680.57
Loose Rock				212,848	41.6	88,544.77
Solid Rock				700	93.6	655.20
Total Yardage	5,572,900			6,199,858		
Handling Material	115,000	10	11,500.00			
Handling Material	225,000	7	15,750.00			
Overhaul	3,300,000	1	33,000.00	12,650,993	1	126,509.93
Overhaul				383,500	0.25	958.75
Ditching Work			4,784.00			

	Original Approximate Estimates of Jan. 26, 1906, Jan. 27, 1906, Feb. 8, 1906, and May 20th, 1908.			Cost to February 28th, 1909.		
	Quantities Cu. Yds.	Unit Price.	Cost.	Quantities Cu. Yds.	Cntr. Pr. & Pr. Co. Work.	Cost.
Extra bills, transportation of men, tools and material, etc						$ 50,077.17
Protection Banks			$ 9,000.00			
Bridges, Trestles and Culverts			134,536.00			121,118.93
Ties			80,125.00			110,148.48
Rails			227,925.00			239,334.65
Track Fastenings			33,027.00			49,097.05
Frogs and Switches			3,778.00			4,983.11
Ballast			95,725.00			105,211.40
Track Laying and Surfacing			52,939.00			133,012.10
Fencing Right of Way			4,900.00			3,416.27
Crossings and Signs			920.00			2,147.66
Interlocking and Signal Apparatus						414.63
Telegraph and Telephone Lines			3,800.00			2,472.51
Station Buildings and Fixtures			6,300.00			624.80
Shops, Engine Houses and Turn Tables			10,500.00			6,562.56
Water Stations			9,000.00			27,069.49
Fuel Stations			12,516.00			13,297.43
Miscellaneous Structures			23,200.00			4,614.32
Transportation of Men and Material			*121,336.00			†137,989.26
Rent of Equipment			104,140.00			130,150.85
Stationery and Printing						218.35
Insurance						38.00
Taxes						54.23
Construction Equipment						2,924.05
Other Expenditures						218.49

	Original Approximate Estimates of Jan. 26, 1906, Jan. 27, 1906, Feb. 8, 1906, and May 20, 1908.			Cost to February 28, 1909.		
	Quantities Cu. Yds.	Unit Price	Cost.	Quantities Cu. Yds.	Cntr. Pr. & Pr. Co. Work	Cost
Injuries to Persons						$3,914.25
Undistributed Bills						53.56
Contractor's Profit			$38,502.00			
Credit old material			48,349.00			
Net total			$2,140,791.00			$3,301,863.03

*This item includes all charges to transportation of men, tools and material.

†This item includes all charges to transportation of men, tools and material for the period up to July 1st, 1907. After that date distribution has been made in accordance with the Interstate Commerce classification and transportation charges have been made against accounts benefited.

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APPENDIX G.

(Page 588.)

THE FOLLOWING IS COPY OF STATEMENT OFFERED IN SO-CALLED SPOKANE CASE, CALLED FOR BY COUNSEL FOR DEFENDANT, AT PAGE 588.

AMENDED STATEMENT BASED ON THE COST OF THE SEATTLE TUNNEL, BEING TAKEN CARE OF BY THE GREAT NORTHERN AND NORTHERN PACIFIC, EACH ONE-HALF.

Deduct from statement already submitted:

Difference Between ⅔ and ½ of Cost of Tunnel	$	308,000
3% from Engineering Item		9,240
10% from Contingencies		31,724
1% from General and Legal Expenses		3,490
10% from Interest Item		35,245
Total amount to be deducted	$	387,699
Total amount of submitted statement		$415,167,616
Deduct as above		387,699
Total		414,779,917

Making average cost per mile of main track, $62,511.

AL IN BOOK

GREAT NORTHERN RAILWAY.

COST OF REPRODUCTION OF SYSTEM.

6635.34 Miles Main and Second Tracks.
1480.24 Miles Side Tracks.
8115.58 Miles Total Tracks.

Engineering		$ 6,860,947.00
Right of Way and Station Grounds		87,067,532.00
Grading		93,098,889.00
Tunnels		7,139,620.00
Bridges, Trestles and Culverts		17,953,023.00
Ties		18,690,731.00
Rails		31,054,392.00
Track Fastenings		7,375,495.00
Frogs and Switches		904,450.00
Ballast		10,509,000.00
Tracklaying and Surfacing		6,998,409.00
Fencing Right of Way		760,815.00
Crossings, Cattle Guards and Signs		1,922,160.00
Interlocking or Signal Apparatus		386,190.00
Telegraph Lines		2,198,283.00
Station Buildings and Fixtures		3,276,300.00
Shops, Roundhouses and Turntables		3,667,900.00
Shop Machinery and Tools		1,779,692.00
Water Stations		1,983,325.00
Fuel Stations		575,700.00
Grain Elevators		2,708,100.00
Storage Warehouses		276,500.00
Docks and Wharves		1,222,900.00
Gas Making Plants		15,000.00
Miscellaneous Structures		3,194,850.00
Track and Bridge Tools		142,877.00
Stores and Supplies on hand Feb. 28, 1907		5,395,463.00
Contingencies		15,259,528.00
Equipment:		
Locomotives	$10,756,324	
Passenger Cars	4,915,764	
Freight Cars and other Equipment	25,249,096	
Total Equipment		$ 40,921,184.00
		$373,339,260.00
General and Legal Expenses		3,733,392.00
		$377,072,652.00
Interest		37,707,265.00
		$414,779,917.00
Average per mile of main track		$62,511

GREAT NORTHERN RAILWAY.

COST OF REPRODUCTION OF SYSTEM.

6635.34 Miles Main and Second Tracks.
1480.24 Miles Side Tracks.
8115.58 Miles Total Tracks.

Engineering		$ 6,870,187.00
Right of Way and Station Grounds		87,067,532.00
Grading		93,098,889.00
Tunnels		7,447,620.00
Bridges, Trestles and Culverts		17,953,028.00
Ties		18,690,731.00
Rails		31,054,392.00
Track Fastenings		7,375,495.00
Frogs and Switches		904,350.00
Ballast		10,509,000.00
Tracklaying and Surfacing		6,998,409.00
Fencing Right of Way		760,815.00
Crossings, Cattle Guards and Signs		1,922,160.00
Interlocking or Signal Apparatus		386,190.00
Telegraph Lines		2,198,283.00
Station Buildings and Fixtures		3,276,300.00
Shops, Roundhouses and Turntables		3,667,900.00
Shop Machinery and Tools		1,779,692.00
Water Stations		1,983,325.00
Fuel Stations		576,700.00
Grain Elevators		2,708,100.00
Storage Warehouses		276,500.00
Docks and Wharves		1,222,900.00
Gas Making Plants		15,000.00
Miscellaneous Structures		3,194,850.00
Track and Bridge Tools		142,877.00
Stores and Supplies on hand Feb. 28, 1007		5,395,463.00
Contingencies		15,291,252.00
Equipment:		
Locomotives	$10,736,324	
Passenger Cars	4,915,764	
Freight Cars and Other Equipment	25,249,096	
Total Equipment		40,921,184.00
		$373,688,224.00
General and Legal Expenses		3,736,882.00
		377,425,106.00
Interest		37,742,510.00
		$415,167,616.00

Average per mile of main track, $62,570.00

GREAT NORTHERN RAILWAY.

STATEMENT SHOWING MILEAGE OF TRACKS OWNED BY THE DIFFERENT COMPANIES UNDER OPERATION APRIL 1, 1907.

	Main Track.	Second, Third, Fourth, Fifth and Sixth Track.	Side Tracks.
	Miles.	Miles.	Miles.
St. Paul, Minneapolis & Manitoba Ry.	3,875.93	56.66	926.16
Willmar & Sioux Falls Railway	433.41	.....	55.64
Eastern Railway Company of Minn.	501.46	50.70	206.95
Duluth Terminal Railway	1.82	.....	3.84
Duluth, Superior & Western Terminal Company to Omaha	5.28	.....	13.85
Park Rapids & Leach Lake Railway Co.	49.04	.....	8.66
Duluth, Watertown & Pacific Ry. Co.	69.84	.....	5.09
Dakota & Great Northern Ry. Co.	343.49	.....	31.61
Montana Central Railway Company	249.26	.....	56.85
Montana & Great Northern Ry. Co.	142.99	.....	8.83
Minnesota & Great Northern Ry. Co.	41.09	.....	2.61
Seattle & Montana Railroad Co.	215.99	2.26	70.64
Midland Railway Co. of Manitoba	77.01	.....	6.57
Brandon, Saskatchewan & Hudson Bay Railway Company	69.45	.....	7.22
Crows Nest Southern Railway Co.	53.20	.....	7.76
Minneapolis Union Railway Co.	2.63	2.63	4.75
Minneapolis Western Railway Co.	1.69	.....	5.20
Spokane Falls & Northern Ry. Co.	130.51	.....	21.20
Nelson & Fort Sheppard Ry. Co.	55.42	.....	3.21
Columbia & Red Mountain Ry. Co.	7.51	.....	.47
Red Mountain Railway Company	9.59	.....	3.99
Washington & Great Northern Ry. Co.	111.72	.....	15.02
Vancouver, Victoria & Eastern Ry. and Navigation Company	74.76	.....	14.12
Total	6,523.09	112.25	1,480.24
	112.25		
Total Main and Second Track	6,635.34		
	1,480.24		
Grand Total All Tracks	8,115.58		

GREAT NORTHERN RAILWAY.

MILEAGE IN OPERATION APRIL 1ST, 1907.

LAKE DISTRICT.

	Miles	
SUPERIOR DIVISION:		
Coon Creek to Superior (Main track)	134.49	
Coon Creek to Superior (Second track)	8.10	
Sandstone to Quarries	2.61	
Duluth Terminal Railway Co.	1.82	147.02
MESABI DIVISION:		
Omaha Crossing at Allouez to Saunders	5.33	
Boyleston to Cass Lake (Main track)	152.42	
Boyleston to Cass Lake (Second track)	42.60	
Mississippi River to Dewey Lake (via Hibbing)	48.42	
Chisholm to Virginia	16.96	
Commodore Mine Branch	1.69	
Kinney Hawkins Mine Branch	10.16	
Crosby Mine Branch	1.56	
Forest Mine Branch	2.49	
Stevenson Mine Aranch	3.10	
Mahoning Mine Branch	2.00	
Webb-Laura Mine Branch	1.41	
Williams Albany Mine to Pierce Jct	2.45	
Monroe Mine Branch	1.76	
Jordan Mine Branch	1.18	
Croxton Mine Branch	1.35	
Kinney Mine Branch	1.41	
South Range Line	9.69	
Stony Brook Line	46.49	352.47
Total Lake District		499.49

EASTERN DISTRICT.

TERMINALS DIVISION:		
St. Paul to west derail switch Coon Creek Jct	20.95	
State Fair Grounds Branch	.64	
Minneapolis Union Railway (Main track)	2.63	
Minneapolis Union Railway (Second track)	2.63	
Minneapolis Western Railway	1.69	
Minneapolis Jct. to Old Spring Park Jct., 0.36 miles west of Ferndale	15.28	
Old Spring Park Jct. 0.36 miles west of Ferndale to end of track at Hutchinson	43.91	
Hopkins Jct. to Hopkins	3.44	
Second, Third, Fourth, Fifth and Sixth tracks	54.34	
North "Y" Minneapolis Junction and east and west "Y" at Minneapolis Union Depot	.33	145.84

	Miles.	
ST. CLOUD AND FERGUS FALLS DIVISION:		
West derail switch Coon Creek Jct. to east switch at Barnesville	195.65	
Elk River to Milaca	31.80	
Clearwater Jct. switch in west Minneapolis to connection switch with St. Cloud and Fergus Falls main line at St. Cloud, including west "Y"	63.33	
St. Cloud to Hinckley	66.38	
East St. Cloud to Sauk Rapids	2.13	
St. Cloud to switch at Willmar (on Willmar line)	55.70	
Sauk Center to Cass Lake	140.00	
Fergus Falls to Pelican Rapids	21.65	
St. Cloud Spur to Dam	2.53	579.17
NORTHERN DIVISION:		
Barnesville to St. Vincent, including line to International Boundary	176.08	
From Junction with St. Vincent line at Carman to Cass Lake	105.85	
Moorhead Jct. to Wahpeton	42.91	
Junction with Barnesville to Grand Forks line at Moorhead to Junction with St. Vincent line at Carman	66.59	
Wylie to St. Hilaire and Red Lake Falls to Greenbush	69.52	460.95
WILLMAR DIVISION:		
From junction with Hutchinson Line, 0.36 miles west of Ferndale, to east yard limit board at Breckenridge, Minn. (Main track)	188.09	
(Second track)	2.32	
Benson Jct. to Watertown	91.62	
Duluth, Watertown & Pacific Ry.—Watertown to Huron	69.84	
Morris Jct. to Lake Traverse	48.60	400.47
BRECKENRIDGE DIVISION:		
From east yard limit board at Breckenridge to junction with Dakota main line at Larimore	173.63	
Tintah to Evansville	32.03	
Yarmouth to Rutland Junction	55.33	
Rutland Jct. to Forbes	63.10	
Rutland Jct. to Aberdeen	64.00	
Casselton to Aneta	67.72	
Aneta to Warwick	46.00	
Addison to Chaffee	11.78	513.59
Total Eastern District		2,100.02

CENTRAL DISTRICT.

	Miles.	
DAKOTA DIVISION:		
From St. Vincent Jct. at Crookston to west yard limit board Devils Lake	115.23	
Barnesville Jct. to Grand Forks Jct., including Alton Branch and M. P. connection, Fargo	107.97	
From Grand Forks Jct. to Neche	80.72	
Grafton to Walhalla	47.84	
Larimore to Hannah	94.94	
Lakota to Sarles	73.12	
Neche to International Boundary	.64	
International Boundary to Portage la Prairie, Man. (Midland Ry. Co. of Manitoba)	77.01	597.47
MINOT DIVISION:		
West yard limit board Devils Lake to west switch Williston	237.14	
Churches Ferry to International Boundary	59.09	
International Boundary to Brandon, Man. (B. S. & H. B. Ry.)	69.45	
York Branch	42.29	
Rugby Jct. to Antler	80.59	
Towner Branch	46.13	
Granville Jct. to Sherwood	61.82	
Berthold to Aurelia	15.00	611.51
MONTANA DIVISION:		
West switch at Williston to east switch at Pacific Jct.	312.34	
East switch at Pacific Jct. to west yard limit board at Cut Bank	125.23	437.57
		1,646.55

WESTERN DISTRICT.

KALISPELL DIVISION:		
West yard limit Cut Bank to west switch at Troy via Whitefish	264.16	
Rexford, Montana, to International Boundary	8.50	
International Boundary to Fernie, B. C. (Crows Nest Southern Ry. Co.)	53.20	
Columbia Falls to Lakeview	62.94	388.90
SPOKANE DIVISION:		
West switch at Troy, Montana, to west yard limit board at Leavenworth, Washington	337.31	337.31

CASCADE DIVISION:

	Miles.	
West yard limit board at Leavenworth to Seattle, Washington, including yard at Delta	149.22	
Second track at Seattle	2.25	
North headblock of "Y" south of Snohomish River bridge, Everett, Washington, to International Boundary at Blaine, Washington	81.79	
Samish Lake Spur	11.38	
Anacortes to Rockport	58.03	
International Boundary at Douglass, B. C., to end of track near South Westminster, B. C.	24.10	326.78
Total Western District		1,052.99

WILLMAR & SIOUX FALLS RAILWAY.

Willmar to center line Division Street, Sioux City, Iowa	223.76	
South Sioux City, Neb., to O'Neill, Neb.	129.16	
Garretson to Yankton	80.49	433.41

MONTANA CENTRAL RAILWAY.

South side of Sun River bridge at Great Falls to Butte	169.22	
Neihart Branch	56.24	
Sand Coulee Branch	14.53	
Cottonwood Branch	5.21	
Mountain View Branch	3.38	
Fair Grounds Branch	.68	
G. N. Ry. east switch Pacific Jct. to south side Sun River, Great Falls	121.56	
G. N. Ry. west side branch, Great Falls	5.04	
G. N. Ry. Johnstown Jct. to Sand Coulee Jct., Great Falls	3.10	
M. & G. N. Ry. Willard to Sweet Grass	134.41	513.37

SPOKANE FALLS & NORTHERN RY. SYSTEM.

SPOKANE FALLS & NORTHERN RY.:		
Spokane to Hillyard	4.30	
From connection with G. N. Ry. at Colbert to International Boundary	126.21	
NELSON & FORT SHEPPARD RY.:		
From International Boundary to Troupe Jct., B. C.	55.42	
COLUMBIA & RED MOUNTAIN RY.:		
From junction with S. F. & N. Ry. near Northport to International Boundary	7.51	
RED MOUNTAIN RAILWAY:		
International Boundary to Rossland, B. C.	9.59	

WASHINGTON & GREAT NORTHERN RY. AND VANCOUVER, VICTORIA & EASTERN RAILWAY AND NAVIGATION CO.:

From Marcus, Wash., to Republic, Wash., including Eureka Gulch Branch	69.38	
From boundary at Laurier to boundary at Danville, including branch to Grand Forks, B. C.	16.50	
Granby Smelter Branch	4.75	
Phoenix Line	24.62	
Curlew to Molson	43.41	
Molson to Oroville	27.82	389.51

SUMMARY.

	Miles.
Lake District	499.49
Eastern District	2,100.02
Central District	1,645.55
Western District	1,052.99
Willmar & Sioux Falls Ry	433.41
Montana Central Railway	513.37
Spokane Falls & Northern System	389.51
Total main and second tracks	6,635.34
Side tracks	1,480.24
Grand total main tracks, second tracks and side tracks	8,115.58

ENGINEERING.

Estimated at 3% of all construction items requiring Engineering supervision, being all items except
Right of way and Station Grounds
Track and Bridge Tools
Stores and Supplies on hand
Equipment
General and Legal Enpenses
Interest

3% of $229,006,222 ..... $6,870,187.00

RIGHT OF WAY AND STATION GROUNDS.

Right of Way and Station Grounds, as per schedule prepared by the Right of Way Department.

GRADING.

27,018 acres clearing	at	82.50	$ 2,228,985.00
340,000 sq. rods grubbing		1.65	561,000.00
165,438,650 cu. yds. earth		.31	51,285,982.00
33,973,350 cu. yds. hard pan		.45	15,288,008.00
8,441,860 cu. yds. loose rock		.55	4,643,023.00
12,771,060 cu. yds. solid rock		1.10	14,048,166.00
1,765,675 cu. yds. riprap		2.00	3,531,350.00
92,500 cu. yds. retaining wall		9.00	832,500.00
194,250 cu. yds. slope wall		3.50	679,875.00
			$93,098,889.00

Average per mile of main track, $14,031.00.

The quantities of grading were arrived at as follows: For 82% of the mileage of the system the actual quantities moved in construction were obtained from Engineering Department records. For the balance of the system the quantities could not be obtained in that way, because no records are available, and they were estimated from profiles and by comparison with adjacent portions of the system where the quantities were known.

To these quantities were added the quantities moved since construction in widening banks, reducing grades, taking out sags, filling bridges and widening and sloping cuts. The result being the actual quantities, as nearly as possible to arrive at same, required to make the roadbed as it exists today. The averages are as follows:

LINES EAST OF HAVRE.

4553.05 miles main track.
1034.76 miles side track.
5587.81 miles total.

Earth.	Hard Pan.	Loose Rock.	Solid Rock.	Total.
111,750,360	12,878,800	1,465,000	322,200	125,416,360
88.4%	10.2%	1.1%	0.3%	

Average cu. yds. per mile main track, 27,760 cu. yds.

LINES WEST OF HAVRE.

2082.29 miles main track.
445.48 miles side track.
2527.77 miles total.

53,688,290	21,094,550	6,976,860	12,448,860	94,208,560
57.0%	22.4%	7.4%	13.2%	

Average cu. yds. per mile main track, 45,250

ENTIRE SYSTEM.

6635.34 miles main track.
1480.24 miles side track.
8115.58 miles total.

165,438,650	33,973,350	8,441,860	12,771,060	220,614,920
75.0%	15.4%	3.8%	5.8%	

Average cu. yds. per mile main track, 33,250.

Prices cover all overhaul and transportation of materials, laborers, outfits, tools, machinery, powder and supplies, and were arrived at as follows:

CLEARING.

Average contract price	75.00	per acre.
Transportation men, tools, supplies	7.50	"
	82.50	"

GRUBBING.

Average contract price	1.50	per sq. rod.
Transportation men, tools, supplies	.15	"
	1.65	"

EARTH.

Average contract price up to 1,000 '. haul	.23	per cu. yd.
Average overhaul	.03½	"
Transportation men, tools, supplies	.04½	"
	.31	"

HARD PAN.

Average contract price up to 1,000 '. haul	.35	per cu. yd.
Average overhaul	.04½	"
Transportation men, tools, powder, supplies	.05½	"
	.45	"

LOOSE ROCK.

Average contract price up to 1,000 '. haul	.45	per cu. yd.
Average overhaul	.04½	"
Transportation men, tools, powder, supplies	.05½	"
	.55	"

SOLID ROCK.

Average contract price up to 1,000 '. haul	1.00	cu. yd.
Average overhaul	.04½	"
Transportation men, tools, powder, supplies	.05½	"
	1.10	"

RIPRAP.

Average contract price	1.50	cu. yd.
Overhaul or train service	.35	"
Transportation men, tools, powder, supplies	.15	"
	2.00	"

RETAINING WALL.

Average contract price for concrete or heavy rubble masonry	7.50	cu. yd.
Train service	.80	"
Transportation men, tools, supplies	.70	"
	9.00	"

SLOPE WALL.

Average contract price	2.50	cu. yd.
Train service	.75	"
Transportation men, tools, supplies	.25	"
	3.50	"

TUNNELS.

5,232	Lin. ft. unlined single track tunnel	70.00	$ 366,240.00
17,346	Lin. ft. timber lined single track tunnel	120.00	2,081,520.00
19,952	Lin. ft. concrete or masonry lined single track tunnel:		
	Boulder, 6,139 ′	175.00	1,074,325.00
	Cascade, 13,813 ′	195.00	2,693,535.00
5,141	Lin. ft. concrete lined double track tunnel (Seattle), $1,848,000. 2/3 to G. N.		1,232,000.00
	Total		$7,447,620.00

Prices were arrived at as follows:

Unlined single track tunnel, contract price for standard unlined section	$ 55.00	lin. ft.
Extra excavation	8.00	"
Transportation men, tools, machinery, powder	7.00	"
	$ 70.00	"
Timber lined single track tunnel:		
Contract price for standard unlined section	$55.00	lin. ft.
Enlargement for timber	30.00	"
Timber, iron in place	25.00	"
Transportation men, tools, materials, machinery, powder, supplies	10.00	"
	$120.00	"
Concrete or masonry lined single track tunnels. Boulder tunnel 6,139 ′. long:		
Excavation	$ 90.00	lin. ft.
Temporary timber lining	20.00	"
Permanent masonry lining	45.00	"
Transportation of men, tools, machinery, materials, powder, etc	20.00	"
	$175.00	"
Cascade Tunnel, 13,813 ′. long:		
Excavation	$ 95.00	lin. ft.
Temporary timber lining	25.00	"
Permanent concrete lining	50.00	"
Transportation of men, tools, machinery, materials, powder, etc	25.00	"
	$195.00	"

Double track concrete lined tunnel at Seattle, 5,141 ′. long, constructed during 1904-05.

Amount shown is actual cost.

BRIDGES, TRESTLES AND CULVERTS.

	No.	Length	Cost to Reproduce.
Stone arch, Minneapolis	1	1,770′	$ 867,000.00
Steel bridges with masonry	260	63,557′	6,941,645.00
Timber trestles	3934	429,851′	5,216,480.00
Howe truss spans	189	19,996′	905,478.00
Permanent culverts	4940		3,021,685.00
Timber culverts	4021		1,000,740.00
Total bridges, trestles and culverts			$17,953,028.00

OVERHEAD HIGHWAY BRIDGES.

(Included under "Crossings, Cattle Guards and Signs.")

STEEL AND MASONRY:		
St. Paul	16	
Minneapolis	32	
Duluth	1	
Superior	2	
Spokane	2	
Everett	3	
Seattle	2	1,344,000.00
Timber over-head bridges		80,510.00
		1,424,510.00

Unit prices used in above estimates of cost:

STEEL:	
F. O. B., St. Paul	$65.00 per ton
Mill and Shop Inspection	.75 per ton
Erection	12.00 per ton
Painting	2.25 per ton
	$80.00 per ton

Freight .005 per ton per mile.

MASONRY:	
1st class	$12.00 per yard
2nd class	8.00 per yard
Concrete	6.00 per yard
Excavation, pumping, coffer dams, etc	Variable

Freight .005 per ton per mile.

TRESTLE BRIDGES:	
Timber	$31.50 per M in place
Piling	.35 per ft. in place
Wrot Iron	.05 per lb. in place
Cast Iron	.05 per lb. in place

Freight .005 per ton per mile.

BRIDGES, TRESTLES AND CULVERTS—CONTINUED.

HOWE TRUSS SPANS:

44′	$18.50 per lin. ft.
60′	27.00 per lin. ft.
75′	34.00 per lin. ft.
87½′	35.00 per lin. ft.
100′	37.50 per lin. ft.
125′	42.00 per lin. ft.
150′	45.00 per lin. ft.

Howe truss, Av.	$25.00 per M
Rods, Plates, etc.	.03 per lb.
Bolts	.02½ per lb.

Freight .005 per ton per mile.

SEWER PIPE PER FOOT.

12 inch	$0
18 inch	0
24 inch	1
27 inch	1

CAST PIPE.

$30.00 per net ton.

Freight, Sewer Pipe, $0.005 per ton per mile.
Freight, Cast Pipe, $0.005 per ton per mile.

TIES.

6635.34 miles at 2850		18,910
1480.24 miles at 2750		3,070
8115.58		21,981
Average price delivered on right of way		.48
Train service and labor loading and handling		.09
Treating one fourth of whole amount	.16	.04
Transportation average 500 miles	5/10c	.21
		.82
21,981,379 at .82		$18,024,731
8880 sets switch ties:		
Average cost per set at mills	$60.00	
Transp. 5/10c. ton mile:		
Average 500 miles	15.00	
	$75.00	
8880 sets at 75.00		666,000
		$18,690,731

RAILS.

Main track average 68.1 lb. per yard...107 per mile
Side track average 60 lb. per yard... 94 2/7 per mile
6635.34 miles main track at 107 tons.....709,981 tons
1480.24 miles side track at 94-2/7 tons.....139,565 tons
Add 5 rails per mile for repair rails:
6635.34 x 5 33178 rails, 103.7 miles, 68.1 lb.
at 107 tons per mile..... 11,096 tons
1480.24 x 5 7401 rails, 21.0 miles, 60 lb.
at 94–2/7 tons per mile..... 1,980 tons

862,622 tons

One Ton

F. O. B., St. Paul, including handling.....$32.00
Transp. Avg. 800 miles 5/10c. T. M..... 4.00

$36.00
862,622 tons at $36.00.....$31,054,392.00

TRACK FASTENINGS.

ANGLE BARS:

6635.34 mi., 17,600 lbs., 8.8 tons.....	58,391	
1480.24 mi., 13,700 lbs., 6.85 tons.....	10,140	
	68,531	
Add for short rails and switches, block rail	1,713	
	70,244	
One ton		
F. O. B. St. Paul including handling.....	$40	
Transp. Avg. 800 mi. 5/10c. T. M.....	4	
	$44	
70,244 tons at $44.....		$3,090,736.00

BOLTS AND NUTS:

6635.34 mi., 1,800 lbs., 0.9 ton.....	5,972	
1480.24 mi., 1,500 lbs., 0.75 ton.....	1,110	
	7,082	
Add for short rails, switches, etc.....	354	
	7,436	
One ton		
F. O. B. St. Paul, including handling.....	$54	
Transp. 800 mi. 5/10c. T. M.....	4	
	$58	
7,436 tons at $58.00.....		$431,288.00

TRACK FASTENINGS—CONTINUED.

SPIKES:

6,635.34 Miles
1,480.24 Miles

8,115.58 Miles, 6,500 lbs., 3.25 ton..... 26,376
Add for switches, etc..... 1,978
28,354

One ton

F. O. B. St. Paul, including handling.....	$42	
Transp. Avg. 800 Mi. 5/10c. T. M.....	4	
	$46	
28,354 tons at $46.....		$1,304,284.00

TIE PLATES:

2,450 Mi. full tie plated:
1,950 Mi. half tie plated:
2,450 Mi. at 14.5 T..... 35,525 tons
1,960 Mi. at 7.25..... 13,438 tons
48,963 tons

One ton.

F. O. B. St. Paul.....	$45	
Transp. 5/10c.....	4	
	$49	
48,963 tons at $49.....		$2,399,187.00

RAIL BRACES: (Not including switches and guard rails)
750 Miles of track at 2,000 per mile..... 1,500,000
at 10c. each, including transportation..... $1,500,000.00

SUMMARY OF TRACK FASTENINGS.

Angle Bars.....	$3,090,736.00
Bolts and Nuts.....	431,288.00
Spikes.....	1,304,284.00
Tie Plates.....	2,399,187.00
Rail Braces (not including switches and guard rail).....	150,000.00
Total.....	$7,375,495.00

FROGS AND SWITCHES.

Average price at St. Paul of one set including switch stand and bolts, lamp, switch points, connecting and tie rods, plates, braces, clips, frog and guard rail.....	$85.00	
Transportation charges, 800 Mi. 5/10c. T. M..	7.50	
8,880 complete turnouts (except ties).....	$92.50	$821,400.00
302 crossing frogs, complete with timber, including transportation.....	275.00	83,050.00
Total.....		$904,450.00

Ballast.

6635.34 Miles main track, 3750 miles have average of 3000 C. Y. per mile and 1900 miles have average of 2250 C. Y. 1480.24 miles side tracks, 950 miles have average of 1500 C. Y. per mile.

3750 Miles at 3000	11,250,000
1900 Miles at 2250	4,275,000
950 Miles at 1500	1,425,000
	16,950,000

AVERAGE PRICE PER C. Y.:

Cost of loading, unloading, putting under track and dressing track	.27
Cost of Steam Shovels, maintenance and repairs of same	.05
Train service, hauling, repairs and rental of equipment, transportation of men, tools and supplies	.30
	.62
16,950,000 C. Y. at .62	$10,509,000.00

Tracklaying and Surfacing.

6635.34 Miles.
1480.24 Miles.

8115.58 Miles.

COST OF HANDLING MATERIALS:

Curving rails, laying and surfacing track	$350.00 per Mile
Tie plating (average)	45.00 per Mile
Train service and rental of equipment, and hauling to front	390.00 per Mile
Transportation of men and outfits, tools and supplies	50.00 per Mile
	$835.00 per Mile

8115.58 Miles at $835.00	$6,776,409.00
8880 Switches at $25.00	220,000.00
Total	$6,998,409.00

Right of Way Fences.

4611 Miles, total at $165	$760,815.00

COST PER MILE:

Standard right of way fence	$150.00
Train service distributing material	10.00
Transportation on material and labor and tools	5.00
	$165.00

CROSSINGS, CATTLE GUARDS AND SIGNS.

Estimated at $75 per Mile for main track, 6635.34 Miles at $75.00	$497,650.00

OVER-HEAD BRIDGES:

Steel	$1,344,000.00
Wood	80,500.00
Total	$1,922,160.00

See details on statement of bridges, trestles and culverts.

INTERLOCKING OR SIGNAL APPARATUS.

Cost to reproduce interlocking	$327,750.00
Cost to reproduce block signaling	58,440.00
Total	$386,190.00

Transportation charges included.

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ESTIMATED COST OF CONSTRUCTION OF TELEGRAPH POLE LINE CONSISTING OF POLES, CROSS ARMS, PINS, GLASS, WIRE, ETC.

	Labor.	Material.	Train Service.	Trans, chgs. men, tools, outfits, material.	Total.
Lake District	$ 31,148.00	$ 72,793.00	$ 1,206.00	$ 14,558.60	$ 119,705.60
Terminals Division	12,950.00	38,223.50	105.00	3,664.85	54,943.35
Fergus Falls Division	83,520.00	230,665.20	1,566.00	22,751.52	338,502.72
Willmar Division	60,900.00	88,521.80	1,215.00	17,704.36	168,341.16
Willmar & Sioux Falls Ry	35,101.00	74,143.00	1,303.80	14,828.60	125,376.40
Breckenridge Division	36,380.00	75,059.60	1,391.70	14,489.92	127,321.22
Northern Division	40,318.20	83,339.12	1,311.00	16,181.12	141,119.44
Dakota Division	55,419.86	152,137.92	1,328.70	29,203.93	238,090.41
Minot Division	42,335.68	91,351.94	1,007.40	15,633.14	150,328.16
Montana Division	44,031.00	100,400.20	1,313.40	20,800.04	166,544.64
Montana Cent. Ry	36,266.12	49,821.06	585.00	10,034.62	86,706.80
Kalispell Division	46,383.82	64,657.56	1,056.00	6,055.37	118,152.75
Spokane Division	43,810.00	65,505.90	1,011.00	13,101.18	123,428.08
Cascade Division	38,917.00	56,172.88	923.10	11,234.57	107,247.55
Spokane Falls & Northern System	37,838.46	45,587.37	872.10	7,990.91	92,288.84
Midland Railway of Manitoba	3,127.20	5,079.48	234.60	1,015.90	9,457.18
Brand. Saskatchewan & Hudson Bay Ry	2,168.14	1,747.93	208.20	349.59	4,473.86
	$ 650,614.48	$1,295,207.46	$ 16,638.00	$ 219,598.22	$2,182,058.16

Estimated value of quadruplex, instruments, batteries, furniture, etc.:

St. Paul General Telegraph Office	$4,210.00	
Willmar Wire Testing Office	1,080.00	
Grand Forks Relay	2,170.00	
Minot Relay Office	2,400.00	
Havre Relay Office	2,350.00	
Whitefish Wire Testing Office	1,460.00	
Spokane Relay Office	1,520.00	
Seattle Relay Office	1,035.00	$16,225.00
		$2,198,283.16

STATION BUILDINGS AND FIXTURES.

PASSENGER DEPOTS (BRICK AND STONE).

St. Paul Union Depot (one-ninth interest included in right of way and station grounds).	
Hamiline	$ 3,000.00
Minneapolis Union Depot	342,500.00
Wayzata	11,100.00
Litchfield (Combination passenger and freight)	17,100.00
Willmar	17,500.00
Benson (Combination passenger and freight)	22,800.00
Morris (Combination passenger and freight)	5,600.00
Breckenridge	19,300.00
Sioux Falls	17,300.00
Sioux City	180,000.00
Aberdeen (Combination passenger and freight)	25,300.00
Ellendale (Combination passenger and freight)	10,800.00
Huron	8,500.00
Anoka (Combination passenger and freight)	7,000.00
St. Cloud	21,800.00
Sauk Center (Combination passenger and freight)	7,000.00
Alexandria	20,400.00
Fergus Falls (Combination passenger and freight)	12,700.00
Barnesville	11,200.00
Moorhead	7,500.00
Crookston (Combination passenger and freight)	21,600.00
Princeton (Combination passenger and freight)	16,000.00
Superior (one-third interest included in right of way and station grounds).	
Fargo	41,800.00
Grand Forks	37,500.00
Mayville (Combination passenger and freight)	4,800.00
Grafton (Combination passenger and freight)	7,500.00
Larimore (Combination passenger and freight)	17,300.00
Devils Lake	25,900.00
Rugby	21,000.00
Minot	19,800.00
Glasgow (Combination passenger and freight)	10,900.00
Kalispell	10,400.00
Spokane	137,500.00
Bellingham	18,400.00
Seattle (½ interest)	295,000.00
	$1,453,900.00
705 Frame Passenger or Combination passenger and freight depots	$1,226,700.00

STATION BUILDINGS AND FIXTURES—CONTINUED.

FREIGHTS DEPOTS (BRICK AND STONE).

St. Paul (2)	$ 79,000.00
Minneapolis (2)	62,000.00
Sioux City (2)	42,400.00
Superior	27,000.00
Duluth	11,200.00
Moorhead	4,000.00
Fargo	18,200.00
Grand Forks	19,800.00
Minot	17,000.00
Havre	6,000.00
Great Falls	22,100.00
Spokane	22,500.00
Everett	11,700.00
Seattle (2)	80,000.00
	$422,900.00
Frame freight houses	$172,800.00

SUMMARY.

Passenger depots, brick and stone	$1,453,900.00
Freight depots, brick and stone	422,900.00
705 Frame passenger or combination passenger and freight depots	1,226,700.00
Frame freight houses	172,800.00
Total	$3,276,300.00

Transportation charges included in each item for men, materials, tools, etc.

Freight transportation figured at .005 per ton mile.

910w

Shops, Roundhouses and Turntables.

SHOPS.

St. Paul	$854,400.00
St. Cloud	75,400.00
Superior	91,000.00
Barnesville	17,500.00
Sioux City	12,500.00
Devils Lake	60,000.00
Havre	91,000.00
Great Falls	42,000.00
Spokane	124,800.00
Everett	70,200.00
(Above does not include Roundhouses, Turntables, Cinder Pits, Water Tanks and Coal Chutes.)	
Frame roundhouses, 88 stalls at $1,400	123,200.00
Brick, stone and concrete roundhouses, 554 stalls, at $2,100	1,163,500.00
Boiler houses, power houses and small shops, not included above	216,000.00
Turntables, frame, 10, at $1,800	18,000.00
Turntables, Steel or Iron, 57, at $6,500	370,500.00
Cinder pits	140,000.00
Store houses, oil houses and sand houses and scrap bins (other than those included in shop buildings above)	198,000.00
Total	$3,667,900.00

Transportation charges included in each item for men, tools, materials, etc.

Freight transportation figured at .005 per ton mile.

Water Stations.

420 Water stations, including tanks, pump houses, pumps, engines, windmills, standpipes, wells, reservoirs and all appurtenances of water stations for supplying locomotives with water (Average $4,722 each)	$1,983,325.00

Transportation charges included.

Fuel Stations.

55 Standard coaling stations complete at $9,500	$544,500.00
52 Platforms coaling stations, portion with cranes and buckets, at $600	31,200.00
Total	$ 575,700.00

Transportation charges included.

Shop Machinery and Tools.

Roundhouse machinery and tools	$ 268,864.00
Repair shop machinery and tools	1,510,828.00
Total	$1,779,692.00

Includes cost of machinery, tools, transportation, foundations and placing same.

Freight transportation figured at .005 per ton mile.

GRAIN ELEVATORS.

Minneapolis	$ 240,000.00
Superior A & X	823,100.00
Superior S (Steel)	1,536,400.00
Seattle, Smith's Cove	108,600.00
Total	$2,708,100.00

Land value not included.
Transportation charges included.

STORAGE WAREHOUSES.

Flour shed, Superior	$142,800.00
Wool warehouses: Armington, Great Falls, Big Sandy, Chinook, Benton	19,800.00
Warehouse Smith's Cove Dock	113,900.00
Total	$276,500.00

Land value not included.
Transportation charges included.

DOCKS AND WHARVES.

Superior, No. 1, including dredging	$175,000.00
Superior, No. 2, including dredging	80,800.00
Superior, Nos. 5 and 6, including dredging and machinery	449,500.00
Seattle, Smith's Cove dock, including dredging	517,600.00
Total	$1,222,900.00

Land value not included.
Transportation charges included.

MISCELLANEOUS STRUCTURES.

General office building and equipment, St. Paul	$590,000
Division office buildings, not otherwise included	18,000
Boarding houses, eating houses	87,500
Section houses, bunk houses, hand-car houses	853,500
Ice houses	107,500
Stock yards	157,600
Track scales	92,250
Snow sheds	295,000
Fences, snow	450,000
Loading platforms	71,000
Stone quarry and crusher plants	45,000
Tie treating plant	85,000
Commissary buildings	15,000
Miscellaneous buildings	327,500
	$3,194,850

Transportation charges included in each item.

TRACK AND BRIDGE TOOLS.

Cost of Sectionmen's and Bridge Carpenters' tools, hand cars and push cars	$142,877.00

STORES AND SUPPLIES ON HAND.

Cost of stock of general material carried by Storekeepers on the system, Feb. 28, 1907	$5,395,463.00

CONTINGENCIES.

10% of the following items:

Grading	$93,098,889.00
Tunnels	7,447,620.00
Bridges, trestles and culverts	17,953,028.00
Ballast	10,509,000.00
Tracklaying and surfacing	6,998,409.00
Station buildings and fixtures	3,276,300.00
Shops, roundhouses and turntables	3,667,900.00
Water stations	1,983,325.00
Fuel stations	575,700.00
Grain elevators	2,708,100.00
Storage warehouses	276,500.00
Docks and wharves	1,222,900.00
Miscellaneous structures	3,194,850.00
	$152,912,521.00
10%	$ 15,291,252.00

To cover the increased cost of the work due to all unforseen causes, such as fires, floods, tornadoes, accidents, etc.

EQUIPMENT.

Cost of locomotives, passenger cars (including passenger coaches, sleeping, dining, buffet, observation, official, baggage, express, postal and combination cars), freight cars of all descriptions, steam shovels, pile drivers, wrecking cranes, rotary snow plows and all other cars. Cost as furnished by the Accounting Department.

Locomotives	$10,756,324.00
Passenger cars	4,915,764.00
Freight cars and all other equipment	25,249,096.00
	$40,921,184.00

General and Legal Expenses.

To cover organization expenses, expenses incurred in disposal of securities, purchase of materials and equipment, salaries and expenses of general offices, clerks, etc., engaged in construction work or construction accounts, attorneys' salaries, fees and expenses and all incidental legal expenses incurred during construction.

Estimated at 1% of all items except interest.

Interest.

Estimated that the entire amount of money required to reproduce the system and equipment will be unproductive for a period of two years. It is assumed that the system can be reproduced in 8 years, or at the rate of 1000 miles of main and sidetrack per year, and that about $50,000,000 would have to be raised each year. It would be two years after the beginning of work before the first 1000 miles would produce revenue sufficient to pay interest on the investment, and so on with each 1000 miles built each succeeding year; so that by the time the system was completed and all earning revenue, interest would have been paid out of the money raised for construction on the entire amount for a period of two years.

Assumed rate of interest, 5%; for two years, 10%.

APPENDIX "H," PAGE 368.

U. P. R. R.
O. S. L. R. R.
O. R. & N. Co.

UNION PACIFIC SYSTEM.

Statement showing the average rate per ton per mile received on Lumber, Coal and Ore for the fiscal years ending June 30, 1904, 1905, 1906, 1907 and 1908.

Also showing the average loading of Hops, Hides, Wool and Canned Goods.

Average rate per ton per mile (cents):

Fiscal years.....	1904	1905	1906	1907	1908
Lumber.....	0.658	0.659	0.595	0.624	0.730
Coal (Bit.).....	.572	.551	.554	.627	.662
Ore.....	.647	.601	.610	.644	.663

Average Load per car, in tons, of:

	Hops	Hides	Wool	Canned Goods
Dec., 1908.....	10	....	....	....
Apr., 1909.....	....	....	16	19
May, 1909.....	....	22	....	....

In the month for which the loading is given for each commodity the movement of that commodity was very large.

ERASTUS YOUNG,
General Auditor.

Omaha, Neb., June 19th, 1909.